

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 006

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1100A0C880R
Governor no. :

Cust. part No. : 3930154

Customer-spec. information
Customer : CDC
Motor : 4BT3.9
Power KW : 63.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 97.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.65
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 97.5

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Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.40
Rated speed rpm : 1155
Tolerance 1/min : +- 5

rack travel mm : 6.00
Rated speed rpm : 1220
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1400

rack travel mm : 6.00
Rated speed rpm : 1220
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 89.0
tolerance degree : +- 4.0

Control lever difference
Grad : 19.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.15
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.65
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.10
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 100.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.65
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 064

Injection pump
Pump designation : PES4A95D320/3RS2927
EP type number : F 002 A10 017

Governor
Governor design. : RSV475...1000A2C944R
Governor no. : F 002 A20 245

Cust. part No. : 3933090

Customer-spec. information
Customer : CDC
Motor : 4BNA3.9
Power KW : 40.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 7.60
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	67.5
<hr/>		
Tolerance cm ³ /1000 strokes	:	+ - 1.0
<hr/>		
Check tolerance cm ³ /1000S.	:	+ - 3.0
<hr/>		
Spreed		
<hr/>		
Tolerance cm ³ /1000 strokes	:	3.5
<hr/>		
Check tolerance cm ³ /1000S.	:	6.0
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Rated speed rpm	:	475
<hr/>		
Rack travel in mm	:	4.60
Tolerance mm	:	+ - 0.10
Del. quantity cm ³ /1000 strokes	:	13.5
Tolerance cm ³ /1000 strokes	:	+ - 2.0
Check tolerance cm ³ /1000S.	:	+ - 4.5
<hr/>		
Spreed		
<hr/>		
Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	5.5
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(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever		
position degree	:	- 3
Rated speed rpm	:	800
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Rack travel in mm	:	0.50
Tolerance mm	:	+ - 0.20
<hr/>		
governor spring		
pre-tension	:	
click setting x	:	3.25
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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1000
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Aneroid pressure		
hPa	:	-
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Del. quantity cm ³ /1000 strokes	:	67.5
Tolerance cm ³ /1000 strokes	:	+ - 1.0
Check tolerance cm ³ /1000S.	:	+ - 3.0
<hr/>		
Spreed		
<hr/>		
Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	6.0
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CONTROL LEVER

control lever		
position degree	:	95.0
tolerance degree	:	+ - 4.0

RATED SPEED		
rack travel mm	:	6.60
Rated speed rpm	:	1070
Tolerance 1/min	:	+ - 5

rack travel mm	:	4.00
Rated speed rpm	:	1090
Tolerance 1/min	:	+ - 5

rack travel mm	:	0.85
Tolerance mm	:	+ - 0.55
Rated speed rpm	:	1175

rack travel mm	:	4.00
Rated speed rpm	:	1090
Tolerance 1/min	:	+ - 15

LOW IDLE

control lever		
position degree	:	77.0
tolerance degree	:	+ - 4.0

Control lever difference		
Grad	:	18.0
tolerance degree	:	+ - 6.0

Setting point w/out bumper spring

Rated speed rpm	:	475
rack travel mm	:	4.10
Tolerance mm	:	+ - 0.10

Rated speed rpm	:	100
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CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 7.60
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 8.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 66.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.5

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Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.97
Test oil : ISO 4113

Combination No. : 0 400 074 883F2

Injection pump
Pump designation : PES4M60C32ORS185
EP type number : 0 410 064 006

Governor
Governor design. : RSF375/1900M78
Governor no. : 0 420 021 274

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.7

Check tolerance
cm³/1000S. : ± 1.7

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 375

Rack travel in mm : 6.00

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 6.5

Tolerance
cm³/1000 strokes : +- 0.5

Speed
Tolerance
cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00

Tolerance mm : +- 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Ref. pressure

ALDA / ADA hPa : 1850

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : +- 0.7

Check tolerance
cm³/1000S. : +- 1.7

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2200

rack travel mm : 8.30

Tolerance mm : +- 0.20

Rated speed rpm : 2600

rack travel mm : 0.50

Tolerance mm : +- 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 12.0

tolerance degree : +- 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 6.00

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.20

Tolerance mm : +- 0.10

Load pick-up

Rated speed rpm : 250

rack travel mm : > 9.00

Rated speed rpm : 900

CRT mm max. : 1.95

rack travel mm : 6.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.80

Tolerance mm : +- 0.05

Rated speed rpm : 1500

rack travel mm : 13.20

Tolerance mm : +- 0.10

Rated speed rpm : 1900

rack travel mm : 12.50

Tolerance mm : +- 0.10

Rated speed rpm : 900

rack travel mm : 11.15

Tolerance mm : +- 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1600
 rack travel mm : -0.25
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1100
 rack travel mm : -2.65
 Tolerance mm : \pm 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : -4.30
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1500
 Del. quantity
 cm³/1000 strokes : 58.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm³/1000 strokes : 55.5
 Tolerance
 cm³/1000 strokes : \pm 1.2
 Check tolerance
 cm³/1000S. : \pm 2.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900

Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900
 Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 2200
 rack travel mm : 8.30
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 31.0
 Tolerance
 cm³/1000 strokes : \pm 2.2
 Check tolerance
 cm³/1000S. : \pm 3.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : > 20.10
 Del. quantity
 cm³/1000 strokes : 54.3
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

End of test specification sheet

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : \pm 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 42.00

control lever
position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.0
tolerance degree : \pm 2.0

Rated speed rpm : 425

Rack travel in mm : 8.40
Tolerance mm : \pm 0.80
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 4.5
Vacuum hPa : 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.97
Test oil : ISO 4113
Combination No. : 0 400 074 883F1
Injection pump
Pump designation : PES4M60C320RS185
EP type number : 0 410 064 006
Governor
Governor design. : RSF375/1900M78
Governor no. : 0 420 021 274

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 2.05
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 21.00
Tolerance mm : +- 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 17.00
Tolerance : +- 0.20
Check
tolerance *NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : +- 0.7

Check tolerance
cm³/1000S. : +- 1.7

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 375

Rack travel in mm : 6.00

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : \pm 0.5

Spread

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 5.00

Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Ref. pressure

ALDA / ADA hPa : 1850

Del. quantity

cm³/1000 strokes : 59.5

Tolerance

cm³/1000 strokes : \pm 0.7

Check tolerance

cm³/1000S. : \pm 1.7

Spread

Tolerance

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 3.5

RATED SPEED

control lever

position degree : 50.0

Rated speed rpm : 2200

rack travel mm : 8.30

Tolerance mm : \pm 0.20

Rated speed rpm : 2600

rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 12.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 6.00

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.20

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 250

rack travel mm : $>$ 9.00

Rated speed rpm : 900

CRT mm max. : 1.95

rack travel mm : 6.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.80

Tolerance mm : \pm 0.05

Rated speed rpm : 1500

rack travel mm : 13.20

Tolerance mm : \pm 0.10

Rated speed rpm : 1900

rack travel mm : 12.50

Tolerance mm : \pm 0.10

Rated speed rpm : 900

rack travel mm : 11.15

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1600
 rack travel mm : -0.25
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1100
 rack travel mm : -2.65
 Tolerance mm : \pm 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : -4.30
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1500
 Del. quantity
 cm³/1000 strokes : 58.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm³/1000 strokes : 55.5
 Tolerance
 cm³/1000 strokes : \pm 1.2
 Check tolerance
 cm³/1000S. : \pm 2.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900

Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900
 Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 2200
 rack travel mm : 8.30
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 31.0
 Tolerance
 cm³/1000 strokes : \pm 2.2
 Check tolerance
 cm³/1000S. : \pm 3.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : > 20.10
 Del. quantity
 cm³/1000 strokes : 54.3
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

End of test specification sheet

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : +- 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 42.00

control lever
position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.0
tolerance degree : +- 2.0

Rated speed rpm : 425

Rack travel in mm : 8.40
Tolerance mm : +- 0.80
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : +- 3.5
Check tolerance
cm³/1000S. : +- 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.06.97
Test oil : ISO 4113
Combination No. : 0 400 074 883F3
Injection pump
Pump designation : PES4M60C320RS185
EP type number : 0 410 064 006
Governor
Governor design. : RSF375/1900M78
Governor no. : 0 420 021 274

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM601 D23 LA
Power KW : 72.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holder
assembly : 1 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

°NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

Tolerance
cm³/1000 strokes : ± 0.7

Check tolerance
cm³/1000s. : ± 1.7

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 375

Rack travel in mm : 5.90

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.5

Tolerance

cm³/1000 strokes : \pm 0.5

Speed

Tolerance

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.00

Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Ref. pressure

ALDA / ADA hPa : 1850

Del. quantity

cm³/1000 strokes : 59.5

Tolerance

cm³/1000 strokes : \pm 0.7

Check tolerance

cm³/1000S. : \pm 1.7

Speed

Tolerance

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 3.5

RATED SPEED

control lever
position degree : 50.0

Rated speed rpm : 2200

rack travel mm : 8.30

Tolerance mm : \pm 0.20

Rated speed rpm : 2600

rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 900

CRT mm max. : 1.95

LOW IDLE

control lever

position degree : 12.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 5.90

SET IDLE AUXILIARY SPRING

Rated speed rpm : 500

rack travel mm : 4.20

Tolerance mm : \pm 0.10

Load pick-up

Rated speed rpm : 200

rack travel mm : 13.00

Rated speed rpm : 900

CRT mm max. : 1.95

rack travel mm : 5.90

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.80

Tolerance mm : \pm 0.05

Rated speed rpm : 1500

rack travel mm : 13.20

Tolerance mm : \pm 0.10

Rated speed rpm : 1900

rack travel mm : 12.50

Tolerance mm : \pm 0.10

Rated speed rpm : 900

rack travel mm : 11.15

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1600
 rack travel mm : -0.25
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
 Ref. pressure
 ALDA / ADA hPa : 1100
 rack travel mm : -2.65
 Tolerance mm : \pm 0.10

Ref. pressure
 ALDA / ADA hPa : 750
 rack travel mm : -4.30
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1500
 Del. quantity
 cm³/1000 strokes : 58.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 1900
 Spreed
 Del. quantity
 cm³/1000 strokes : 55.5
 Tolerance
 cm³/1000 strokes : \pm 1.2
 Check tolerance
 cm³/1000S. : \pm 2.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900

Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

Ref. pressure
 ALDA / ADA hPa : 1100
 Rated speed rpm : 900
 Del. quantity
 cm³/1000 strokes : 43.0
 Tolerance
 cm³/1000 strokes : \pm 0.7
 Check tolerance
 cm³/1000S. : \pm 1.7
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

HIGH IDLE

Ref. pressure
 ALDA / ADA hPa : 1850
 Rated speed rpm : 2200
 rack travel mm : 8.30
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 31.0
 Tolerance
 cm³/1000 strokes : \pm 2.2
 Check tolerance
 cm³/1000S. : \pm 3.2
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : > 20.10
 Del. quantity
 cm³/1000 strokes : 54.3
 Tolerance
 cm³/1000 strokes : \pm 4.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 8.5

End of test specification sheet

LOW IDLE

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 7.8
Check tolerance
cm³/1000S. : +- 2.3
Spreed
Check tolerance
cm³/1000S. : 1.5

control lever
position degree : > 42.00

control lever
position degree : < 39.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 12.0
tolerance degree : +- 2.0

Rated speed rpm : 425

Rack travel in mm : 7.50
Tolerance mm : +- 0.80
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : +- 3.5
Check tolerance
cm³/1000S. : +- 4.5
Vacuum hPa : 450.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375
Vacuum hPa : -450.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.06.97
Test oil : ISO 4113
Combination No. : 0 402 010 701
Injection pump
Pump designation : PES12P130A900RS3391
EP type number : 0 412 030 700

Governor
Governor design. :
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : FINCANTIERI
Motor : 1312 T 3-B
Power kW : 625.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 1-12- 9- 4- 5
: - 8- 11- 2- 3
: - 10- 7- 6

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 300.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

Rated speed rpm : 350

Del. quantity
cm3/1000 strokes : 30.0

Tolerance
cm3/1000 strokes : +- 4.0

Check tolerance
cm3/1000S. : +- 8.0

Spreed

Tolerance
cm3/1000 strokes : 9.0

Check tolerance
cm3/1000S. : 13.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 300.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 6.0

Spreed

Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 15.00

Tolerance mm : +- 0.05

LOW IDLE

Rated speed rpm : 350

Del. quantity
cm3/1000 strokes : 30.0

Tolerance
cm3/1000 strokes : +- 4.0

Check tolerance
cm3/1000S. : +- 8.0

Spreed

Tolerance
cm3/1000 strokes : 9.0

Check tolerance
cm3/1000S. : 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.97

Test oil : ISO 4113

Combination No. : 0 402 076 816

Injection pump

Pump designation : PES6P120A720RS3340

EP type number : 0 412 026 773

Governor

Governer design. : RSV650...1100P8A566

: -5

Governer no. : 0 421 833 601

Cust. part No. :

Customer-spec. information

Customer : NH

Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Check

tolerance °NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1025

Rack travel in mm : 11.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 159.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1025

Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 159.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0

RATED SPEED

rack travel mm : 4.00

Rated speed rpm : 1100

Tolerance 1/min : \pm 15

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1067

rack travel mm : 10.40

Rated speed rpm : 1097

Tolerance 1/min : \pm 5

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1250

Rated speed rpm : 1068

rack travel mm : 10.40

Rated speed rpm : 1098

Tolerance 1/min : \pm 5

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1069

rack travel mm : 10.40

Rated speed rpm : 1099
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1070
rack travel mm : 10.40

Rated speed rpm : 1100
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1071
rack travel mm : 10.40

Rated speed rpm : 1101
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1072
rack travel mm : 10.40

Rated speed rpm : 1102
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 79.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 4.10
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 4.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00

A23

Rated speed rpm : 700

TORQUE CONTROL

Rated speed rpm : 1025
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.35
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600
rack travel mm : 12.30
Tolerance mm : \pm 0.15

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 1050
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : +- 0.50
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 650

Rack travel in mm : 4.60
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.97
Test oil : ISO 4113

Combination No. : 0 402 630 811

Injection pump
Pump designation : PE12P130A920/6LS7868
EP type number : 0 412 630 804

Governor
Governor design. : RQV400...1150PA1004
Governor no. : 0 421 813 932

Cust. part No. :

Customer-spec. information
Customer : IVECO-LANCIA
Motor : 8292.43.003
Power KW : 938.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1; 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 120
Tolerance L/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 4- 9- 8- 5- 2
: - 11- 10- 3- 6
: - 7- 12

Phasing : 0-15-60-75-120-135
: -180-195-240-255
: -300-315

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.95
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 304.5

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 20.0

Check tolerance
cm³/1000S. : 24.0

Rated speed rpm : 400

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 38.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 20.0

Check tolerance
cm³/1000S. : 24.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1212
guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 2.59
Tolerance mm : \pm 0.25

Rated speed rpm : 697
Tolerance mm : \pm 0.25

Rated speed rpm : 449

guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 114
Rated speed rpm : 850

Rack travel in mm : 17.50
Tolerance mm : \pm 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 304.5

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 20.0

Check tolerance
cm³/1000S. : 24.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.90
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 5.70

Testing:

Rated speed rpm : 400
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 475

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 11.95
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.40
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Pressure hPa : 340
rack travel mm : 8.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 185.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 7.0
Speed
Tolerance
cm³/1000 strokes : 20.0
Check tolerance
cm³/1000s. : 24.0

End of test specification sheet

Note remarks

Edition : 01.07.97
Test oil : ISO 4113
Combination No. : 0 402 646 665

Governor
Governor design. : RQV300...950PA1002
: -3K
Governor no. : 0 421 815 491

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42K.3000

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : \pm 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

Prestroke mm	:	5.05
Tolerance mm	:	+ - 0.05
Check		
tolerance mm	:	+ - 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

```
Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.50
Check
tolerance °NW : + 0.75
```

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

Rated speed rpm : 950

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 242.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.30
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 32.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1025
guide sleeve
travel mm : 9.00
Tolerance mm : +- 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.64
Tolerance mm : +- 0.20

Rated speed rpm : 764
guide sleeve
travel mm : 6.22
Tolerance mm : +- 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.78
Tolerance mm : +- 0.25

Rated speed rpm : 1330

guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1190

Rack travel in mm : 11.00
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 242.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 1010

Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1110

Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.50
Tolerance mm : +- 0.50

Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 6.20

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 10.80
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 1000
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 950
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.40

MEASUREMENT

Rated speed rpm : 950
Pressure hPa : 290
rack travel mm : 9.35
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 11.10
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.30

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 32.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.97
Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump
Pump designation : PE6P120A32ORS7412
EP type number : 0 412 626 953

Governor
Governor design. : RQV275...1000PA1278K
Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF
Motor : XF 315 M
Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 3.80

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1077
guide sleeve
travel mm : 10.24
Tolerance mm : +- 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : +- 0.20

Rated speed rpm : 704
guide sleeve
travel mm : 6.53
Tolerance mm : +- 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : +- 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1158

Rack travel in mm : 12.00
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 318.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 12.40
Rated speed rpm : 1040
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : $>$ 6.60

Testing:

Rated speed rpm : 275
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.40
Tolerance mm : \pm 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 8.55
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 520
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.80
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 342.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.80

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 17.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.97

Test oil : ISO 4113

Combination No. : 0 402 646 677

Injection pump
Pump designation : PE6P120A32ORS7361
EP type number : 0 412 626 939

Governor
Governor design. : RQV275...1150PA1349K
Governor no. : 0 421 815 556

Cust. part No. : 1322507

Customer-spec. information

Customer : DAF
Motor : RS/GS 245 M
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 14.65
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : G-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.30
Tolerance mm : ± 0.05

Del. quantity	
cm ³ /1000 strokes	: 258.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: 5.00
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 16.0
Tolerance	
cm ³ /1000 strokes	: ± 2.0
Check tolerance	
cm ³ /1000S.	: ± 5.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1217
guide sleeve	
travel mm	: 8.07
Tolerance mm	: ± 0.15

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.71
Tolerance mm	: ± 0.20

Rated speed rpm	: 940
guide sleeve	
travel mm	: 5.44
Tolerance mm	: ± 0.25

Rated speed rpm	: 520
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guide sleeve	
travel mm	: 3.40
Tolerance mm	: ± 0.25

Rated speed rpm	: 1427
guide sleeve	
travel mm	: 12.00
Tolerance mm	: ± 0.25

Rated speed rpm	: 1520
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1384

Rack travel in mm	: 13.65
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 850
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm ³ /1000 strokes	: 258.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 114.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 13.90
Rated speed rpm	: 1215
Tolerance 1/min	: ± 5
Check	
speed 1/min	: ± 10

rack travel mm	: 4.00
Rated speed rpm	: 1340

Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.70
Tolerance mm : +- 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 72.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : +- 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.30
Tolerance mm : +- 0.05

Rated speed rpm : 1130
rack travel mm : 14.90
Tolerance mm : +- 0.05

Rated speed rpm : 1025
rack travel mm : 14.50
Tolerance mm : +- 0.10

Rated speed rpm : 650
rack travel mm : 13.20
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 12.80
Tolerance mm : +- 0.10

Rated speed rpm : 1150
rack travel mm : 14.90
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1130
Pressure hPa : 1500
rack travel mm : 14.90
Tolerance mm : +- 0.05

Rated speed rpm : 1130
Pressure hPa : -
rack travel mm : 3.40
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 1130

Pressure hPa : 600
rack travel mm : 13.90
Tolerance mm : +- 0.05

Pressure hPa : 250
rack travel mm : 10.45
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1130
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.97
Test oil : ISO 4113

Combination No. : 0 402 696 032

Injection pump
Pump designation : PE6H120/320LS16
EP type number : 0 412 626 005

Governor
Governor design. : RE36
Governor no. : 0 421 890 369

Cust. part No. : 0250746502

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 7.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 3.000
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm3/1000 strokes : 375.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050
Uact V : 3.000
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm3/1000 strokes : 339.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0

Rated speed rpm : 550
Uact V : 2.800
Prestroke solenoid
Stroke mm : 8.70
Del. quantity
cm3/1000 strokes : 367.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.060
Prestroke solenoid
Stroke mm : 8.00
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 1.900
Prestroke solenoid
Stroke mm : 10.00
Del. quantity
cm³/1000 strokes : 106.0
Tolerance
cm³/1000 strokes : \pm 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.97
Test oil : ISO 4113
Combination No. : 0 402 696 033
Injection pump
Pump designation : PE6H120/320LS14
EP type number : 0 412 626 004
Governor
Governor design. : RE36
Governor no. : 0 421 890 369

Cust. part No. : 0250745502

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 7.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 6

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 3.000
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm3/1000 strokes : 375.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050
Uact V : 3.000
Prestroke solenoid
Stroke mm : 7.00
Del. quantity
cm3/1000 strokes : 339.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0

Rated speed rpm : 550
Uact V : 2.800
Prestroke solenoid
Stroke mm : 8.70
Del. quantity
cm3/1000 strokes : 367.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	:	+ 0.060
Check tolerance		
Volt	:	+ 0.060
Prestroke solenoid		
Stroke mm	:	8.00
Del. quantity		
cm ³ /1000 strokes	:	25.0
Tolerance		
cm ³ /1000 strokes	:	+ 3.0
Spread		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000s.	:	12.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	10.00
Del. quantity		
cm ³ /1000 strokes	:	106.0
Tolerance		
cm ³ /1000 strokes	:	+ - 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.97
Test oil : ISO 4113
Combination No. : 0 402 698 032
Injection pump
Pump designation : PE8H120/320LS3-1
EP type number : 0 412 628 005
Governor
Governor design. : RE36
Governor no. : 0 421 890 369

Cust. part No. : 0250746502

Customer-spec. information
Customer : MB-NFZ
Motor : OM 442 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 7.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 2.800
Prestroke solenoid
Stroke mm : 7.40
Del. quantity
cm3/1000 strokes : 341.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.900
Prestroke solenoid
Stroke mm : 8.00
Del. quantity
cm3/1000 strokes : 333.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0

Rated speed rpm : 550
Uact V : 2.700
Prestroke solenoid
Stroke mm : 9.50
Del. quantity
cm3/1000 strokes : 351.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.500
Tolerance Volt	:	+ 0.060
Check tolerance		
Volt	:	+ 0.060
Prestroke solenoid		
Stroke mm	:	8.00
Del. quantity		
cm3/1000 strokes	:	23.0
Tolerance		
cm3/1000 strokes	:	+ 3.0
Spread		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000S.	:	12.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	10.00
Del. quantity		
cm3/1000 strokes	:	108.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.97

Test oil : ISO 4113

Combination No. : 0 402 746 601

Injection pump

Pump designation : PES6P120A720RS7389

EP type number : 0 412 726 944

Governor

Governer design. : RQ275/1050PA1021-4

Governer no. : 0 421 801 795

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor : 8460.41E.711

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 145

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Check

tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.05

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 168.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 168.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 10.00

Rated speed rpm : 1110

Tolerance 1/min : ± 8

rack travel mm : 4.00

Rated speed rpm : 1170

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 73.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 275

rack travel mm : 4.60

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 356

Tolerance 1/min : ± 20

TORQUE CONTROL

Rated speed rpm : 1050

rack travel mm : 11.05

Tolerance mm : ± 0.05

Rated speed rpm : 600

rack travel mm : 11.10

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 11.05
Tolerance mm : \pm 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 350
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 178.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.06.97

Test oil : ISO 4113

Combination No. : 0 402 796 033

Injection pump

Pump designation : PES6H120/720LS18

EP type number : 0 412 726 010

Governor

Governor design. : RE36

Governor no. : 0 421 890 370

Cust. part No. : 0250745702

Customer-spec. information

Customer : MB-NFZ

Motor : OM 447 hla

TEST BENCH REQUIREMENTS

Inlet line : 3.2 EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 7.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 6

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 800
Uact V : 2.650
Prestroke solenoid
Stroke mm : 9.00
Del. quantity
cm3/1000 strokes : 302.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1100
Uact V : 2.750
Prestroke solenoid
Stroke mm : 6.00
Del. quantity
cm3/1000 strokes : 302.0
Tolerance
cm3/1000 strokes : +/- 5.0
Check tolerance
cm3/1000S. : +/- 8.0

Rated speed rpm : 550
Uact V : 2.350
Prestroke solenoid
Stroke mm : 9.00
Del. quantity
cm3/1000 strokes : 272.0
Tolerance
cm3/1000 strokes : +/- 8.0
Check tolerance
cm3/1000S. : +/- 11.0

TEST POINT L1

Rated speed rpm	:	300
Uact V	:	1.440
Tolerance Volt	:	+ 0.060
Check tolerance		
Volt	:	+ 0.060
Prestroke solenoid		
Stroke mm	:	9.00
Del. quantity		
cm3/1000 strokes	:	25.0
Tolerance		
cm3/1000 strokes	:	+ 3.0
Spread		
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000S.	:	9.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	1.900
Prestroke solenoid		
Stroke mm	:	9.00
Del. quantity		
cm3/1000 strokes	:	104.0
Tolerance		
cm3/1000 strokes	:	+ 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.97
Test oil : ISO 4113

Combination No. : 0 402 066 710

Injection pump
Pump designation : PES6P110A120RS3357
EP type number : 0 412 016 754

Governor
Governor design. : RSV400...900P4A633
Governor no. : 0 421 833 541

Cust. part No. : 3931255

Customer-spec. information
Customer : CDC
Motor : 6CTA ELITE
Power KW : 207.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 213.0
Tolerance cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

Rated speed rpm	: 400
Rack travel in mm	: 6.20
Tolerance mm	: +- 0.20
Del. quantity cm ³ /1000 strokes	: 24.0
Tolerance cm ³ /1000 strokes	: +- 2.0
Check tolerance cm ³ /1000S.	: +- 4.5
Spreed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
governor spring pre-tension click setting x	: 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 900
-----------------	-------

Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 213.0
Tolerance cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 102.0
tolerance degree	: +- 4.0

RATED SPEED	
rack travel mm	: 12.30
Rated speed rpm	: 960
Tolerance 1/min	: +- 5

rack travel mm	: 6.40
Rated speed rpm	: 990
Tolerance 1/min	: +- 5

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1100

rack travel mm	: 6.40
Rated speed rpm	: 990
Tolerance 1/min	: +- 15

LOW IDLE

control lever position degree	: 77.0
tolerance degree	: +- 4.0

Control lever difference	
Grad	: 25.0
tolerance degree	: +- 6.0

Setting point w/out bumper spring

Rated speed rpm	: 400
rack travel mm	: 5.70
Tolerance mm	: +- 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min. : < 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.20
Tolerance mm : \pm 0.20

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 6.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97
Test oil : ISO 4113

Combination No. : 0 402 736 907

Injection pump
Pump designation : PES6P120A120RS7342
EP type number : 0 412 726 967

Governor
Governor design. : RQV450...1100PA1334K
Governor no. : 0 421 815 549

Cust. part No. : 3931940

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.03
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.25
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 227.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 450
Rack travel in mm	: 6.40
Tolerance mm	: ± 0.20
Del. quantity cm ³ /1000 strokes	: 31.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 5.0
Spread	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1162
guide sleeve travel mm	: 7.49
Tolerance mm	: ± 0.15

Rated speed rpm	: 450
guide sleeve travel mm	: 1.33
Tolerance mm	: ± 0.20

Rated speed rpm	: 860
guide sleeve travel mm	: 4.55
Tolerance mm	: ± 0.25

Rated speed rpm	: 1560
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guide sleeve travel mm	: 13.50
Tolerance mm	: ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
Aneroid pressure hPa	: 900
Del. quantity cm ³ /1000 strokes	: 227.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 117.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 13.20
Rated speed rpm	: 1170
Tolerance 1/min	: ± 15

rack travel mm	: 8.00
Rated speed rpm	: 1250
Tolerance 1/min	: ± 5

rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1350

LOW IDLE

control lever position degree	: 76.5
tolerance degree	: ± 4.0

Control lever difference

Grad	: 40.5
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm	: 375
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CRT mm min. : > 7.70

Testing:

Rated speed rpm : 450
rack travel mm : 6.40
Tolerance mm : \pm 0.20

Rated speed rpm : 525

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.55
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 13.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 900

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 12.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1100
Pressure hPa : 400
rack travel mm : 13.80
Tolerance mm : \pm 0.20

Pressure hPa : 300
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 390

Check
speed 1/min : > 80

CO4

Check
speed 1/min : < 400

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 183.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 156.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 6.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : +- 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 30.06.97

Test oil : ISO 4113

Combination No. : 0 402 744 806

Injection pump

Pump designation : PES4P120A32ORS7431

EP type number : 0 412 724 805

Governor

Governer design. : RQV325...1500PA1333

: -1K

Governer no. : 0 421 815 555

Cust. part No. : 3393633

Customer-spec. information

Customer : CDC

Motor : 4BTA-A

Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 103

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.90

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 11.00

Tolerance : ± 0.50

Check

tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 15.25

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 208.5

Tolerance	
cm3/1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm3/1000S.	: + 4.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm3/1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm3/1000S.	: 12.0
<hr/>	
Rated speed rpm	: 325
<hr/>	
Rack travel in mm	: 7.80
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 20.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 5.0
Spread	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1555
guide sleeve	
travel mm	: 9.02
Tolerance mm	: + 0.15

Rated speed rpm	: 325
guide sleeve	
travel mm	: 1.21
Tolerance mm	: + 0.20

Rated speed rpm	: 1007
guide sleeve	
travel mm	: 5.41
Tolerance mm	: + 0.25

Rated speed rpm	: 560
guide sleeve	
travel mm	: 3.15
Tolerance mm	: + 0.25

Rated speed rpm	: 1970
-----------------	--------

C07

guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1500
Aneroid pressure	
hPa	: 900
Del. quantity	
cm3/1000 strokes	: 208.5
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spread	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

CONTROL LEVER

control lever	
position degree	: 116.5
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 14.25
Rated speed rpm	: 1565
Tolerance 1/min	: + 5

rack travel mm	: 5.50
Rated speed rpm	: 1720
Tolerance 1/min	: + 15

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1800

LOW IDLE

control lever	
position degree	: 75.0
tolerance degree	: + 4.0

Control lever difference	
Grad	: 41.5
tolerance degree	: + 6.0

Setting point w/out bumper spring

Rated speed rpm	: 275
-----------------	-------

CRT mm min. : > 8.10

Testing:

Rated speed rpm : 325
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 14.80
Tolerance mm : \pm 0.20

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1500
Pressure hPa : -

Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 12.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1500
Pressure hPa : 570
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 13.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1100

Del. quantity
cm³/1000 strokes : 195.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.60
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 7.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.97
Test oil : ISO 4113
Combination No. : 0 402 796 813
Injection pump
Pump designation : PES6P120A720RS7356
EP type number : 0 412 726 919
Governor
Governor design. : RE30
Governor no. : 0 421 890 017

Cust. part No. : RE 61658

Customer-spec. information
Customer : DEERE
Motor : 6081 HF001
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 077
Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 9.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
Uact V : 3.030
Del. quantity
cm3/1000 strokes : 213.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 3.120
Del. quantity
cm3/1000 strokes : 237.0
Tolerance
cm3/1000 strokes : +/- 3.0
Check tolerance
cm3/1000S. : +/- 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

TEST POINT L1

Rated speed rpm : 450
Uact V : 1.740
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.060
Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : +- 3.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.550
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 028

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV450...1100A0C905R
Governor no. : F 002 A20 219

Cust. part No. : 3931398

Customer-spec. information
Customer : CDC
Motor : 6BT
Power kW : 72.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 8.95
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 68.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000s. : \pm 3.0

Spreed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000s. : 6.0

Rated speed rpm : 450

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000s. : \pm 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 68.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000s. : \pm 3.0

Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 6.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 7.90
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

rack travel mm : 5.20
Rated speed rpm : 1225
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1500

rack travel mm : 5.20
Rated speed rpm : 1230
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 93.0
tolerance degree : \pm 4.0

Control lever difference
Grad : 19.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 8.95
Tolerance mm : \pm 0.05

Rated speed rpm : 850

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 068

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : F 002 A10 019

Governor
Governor design. : RSV450...90QA7C946R
Governor no. : F 002 A20 246

Cust. part No. : 3933101

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	134.5
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 3.0
Speed		
Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	6.0

Rated speed rpm	:	450
Rack travel in mm	:	7.50
Tolerance mm	:	+ 0.10
Del. quantity cm ³ /1000 strokes	:	22.0
Tolerance cm ³ /1000 strokes	:	+ 2.0
Check tolerance cm ³ /1000S.	:	+ 4.5
Speed		
Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
Rack travel in mm	:	0.50
Tolerance mm	:	+ 0.20
governor spring pre-tension click setting x	:	3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	900
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Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	134.5
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 3.0
Speed		
Tolerance cm ³ /1000 strokes	:	3.5
Check tolerance cm ³ /1000S.	:	6.0

CONTROL LEVER

control lever position degree	:	112.5
tolerance degree	:	+ 4.0

RATED SPEED		
rack travel mm	:	12.30
Rated speed rpm	:	955
Tolerance 1/min	:	+ 5

rack travel mm	:	4.00
Rated speed rpm	:	995
Tolerance 1/min	:	+ 5

rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1075

rack travel mm	:	4.00
Rated speed rpm	:	1005
Tolerance 1/min	:	+ 15

LOW IDLE

control lever position degree	:	87.0
tolerance degree	:	+ 4.0

Control lever difference Grad	:	25.5
tolerance degree	:	+ 6.0

Setting point w/out bumper spring

Rated speed rpm	:	450
rack travel mm	:	7.00
Tolerance mm	:	+ 0.10

Rated speed rpm	:	100
-----------------	---	-----

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 7.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 069

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV500...110CA2C947R
Governor no. : F 002 A20 248

Cust. part No. : 3933623

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity	
cm3/1000 strokes	: 120.5
<hr/>	
Tolerance	
cm3/1000 strokes	: +- 1.0
<hr/>	
Check tolerance	
cm3/1000S.	: +- 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm3/1000 strokes	: 3.5
<hr/>	
Check tolerance	
cm3/1000S.	: 6.0
<hr/>	

Rated speed rpm	: 500
<hr/>	
Rack travel in mm	: 5.50
Tolerance mm	: +- 0.10
Del. quantity	
cm3/1000 strokes	: 21.5
Tolerance	
cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000S.	: +- 4.5
Spreed	
Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance	
cm3/1000S.	: 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
<hr/>	
governor spring	
pre-tension	
click setting x	: 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
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Aneroid pressure	
hPa	: 1200
Del. quantity	
cm3/1000 strokes	: 120.5
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 3.0
Spreed	
Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance	
cm3/1000S.	: 6.0

CONTROL LEVER

control lever	
position degree	: 97.0
tolerance degree	: +- 4.0

RATED SPEED	
rack travel mm	: 12.80
Rated speed rpm	: 1155
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1240
Tolerance 1/min	: +- 5

rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1400

rack travel mm	: 4.00
Rated speed rpm	: 1245
Tolerance 1/min	: +- 15

LOW IDLE

control lever	
position degree	: 76.0
tolerance degree	: +- 4.0

Control lever difference	
Grad	: 21.0
tolerance degree	: +- 6.0

Setting point w/out bumper spring

Rated speed rpm	: 500
rack travel mm	: 5.00
Tolerance mm	: +- 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.80
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 14.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 13.00
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 11.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 134.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 04.07.97

Test oil : ISO 4113

Combination No. : 0 401 870 070

Injection pump

Pump designation : PE12P110A520/5RS408

EP type number : 0 411 810 039

Governor

Governor design. : RSUV300...1150POA324

: DR

Governor no. : 0 421 831 008

Cust. part No. :

Customer-spec. information

Customer : MWM

Motor : D,DT,TBD232V12

TEST BENCH REQUIREMENTS

Inlet line : 3.1u3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1-12- 9- 4- 5- 8

: - 11- 2- 3- 10

: - 7- 6

Phasing : 0-30-60-90-120-150

: -180-210-240-270

: -300-330

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.25

Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 137.5
<hr/>	
Tolerance cm ³ /1000 strokes	: +- 1.5
<hr/>	
Check tolerance cm ³ /1000S.	: +- 4.0
<hr/>	
Spreed	
<hr/>	
Tolerance cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance cm ³ /1000S.	: 7.5
<hr/>	

Rated speed rpm	: 300
Rack travel in mm	: 7.30
Tolerance mm	: +- 0.10
Del. quantity cm ³ /1000 strokes	: 26.0
Tolerance cm ³ /1000 strokes	: +- 3.0
Check tolerance cm ³ /1000S.	: +- 5.5
Spreed	
Tolerance cm ³ /1000 strokes	: 4.5
Check tolerance cm ³ /1000S.	: 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: +- 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 137.5

Tolerance cm ³ /1000 strokes	: +- 1.5
Check tolerance cm ³ /1000S.	: +- 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 61.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 11.20
Rated speed rpm	: 1195
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1250
Tolerance 1/min	: +- 15

rack travel mm	: 1.00
Tolerance mm	: +- 0.70
Rated speed rpm	: 1400

rack travel mm	: 4.00
Rated speed rpm	: 1260
Tolerance 1/min	: +- 15

LOW IDLE

control lever position degree	: 21.0
tolerance degree	: +- 4.0

Setting point w/out bumper spring

Rated speed rpm	: 300
rack travel mm	: 6.80
Tolerance mm	: +- 0.10

Testing:

Rated speed rpm	: 300
rack travel mm	: 7.30
Tolerance mm	: +- 0.10

rack travel mm	: 2.00
Rated speed rpm	: 450
Tolerance 1/min	: +- 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.25
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 7.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97

Test oil : ISO 4113

Combination No. : 0 402 076 801A

Injection pump

Pump designation : PES6P120A1320/5RS337

: 2Y

EP type number : 0 412 026 793

Governor

Governer design. : RSV350...1050P1A641

Governer no. : 0 421 833 553

Cust. part No. : 1382923 - version A

Customer-spec. information

Customer : SCANIA

Motor : DSI1172A, -C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.65
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 234.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.60

Rated speed rpm : 783
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.60

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.60

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.60

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.60

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.60

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.65
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.65
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 801a
Injection pump
Pump designation : PES6P120A1320/5RS337
: 2Y
EP type number : 0 412 026 793
Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1382923 - Version B

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 4.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : + 4.0

control lever
position degree : 84.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.50

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.50

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.50

Rated speed rpm : 790
Tolerance 1/min : + 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.50

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.50

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.50

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.55
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97

Test oil : ISO 4113

Combination No. : 0 402 076 801C

Injection pump

Pump designation : PES6P120A1320/5RS337
: 2Y

EP type number : 0 412 026 793

Governor

Governor design. : RSV350...1050P1A641

Governer no. : 0 421 833 553

Cust. part No. : 1382923 - Version C

Customer-spec. information

Customer : SCANIA

Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : +- 0.1

Test nozzle holde
assembly

: 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 4.45

Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

D04

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : \pm 4.0

control lever
position degree : 84.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 14.80

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 14.80

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 14.80

Rated speed rpm : 790
Tolerance 1/min : \pm 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 14.80

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 14.80

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 14.80

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 802A

Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794

Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1385930 - Version A

Customer-spec. information
Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.50

Rated speed rpm : 1095

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1190

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00

Rated speed rpm : 1210

Tolerance 1/min : \pm 15

Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.55
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 410
rack travel mm : 12.60
Tolerance mm : \pm 0.20

Pressure hPa : 670
rack travel mm : 13.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 811A

Injection pump
Pump designation : PES6P120A1320/5RS338
: 0
EP type number :

Governor
Governor design. : RSV350...1100P8A664
Governor no. :

Cust. part No. : 1393864 - Version A

Customer-spec. information
Customer : SCANIA
Motor : DS9 93M, DSC9 47A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : \pm 4.0

control lever
position degree : 106.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 24.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 13.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Pressure hPa : 540
rack travel mm : 13.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 186.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 811B
Injection pump
Pump designation : PES6P120A1320/5RS338
: 0
EP type number : 0 412 026 800
Governor
Governor design. : RSV350...1100P8A664
Governor no. : 0 421 833 584

Cust. part No. : 1393864 - Version B

Customer-spec. information

Customer : SCANIA
Motor : D59 93M, D5C9 47A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.35
Tolerance mm : \pm 0.05

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1145
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

control lever
position degree : 27.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.70
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 230
rack travel mm : 11.15
Tolerance mm : ± 0.15

Pressure hPa : 310
rack travel mm : 11.65
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 812A
Injection pump
Pump designation : PES6P120A1320/5RS338
: 1
EP type number : 0 412 026 801
Governor
Governor design. : RSV350...1100P1A666
Governor no. : 0 421 833 585
Cust. part No. : 1393867 - Version A

Customer-spec. information
Customer : SCANIA
Motor : DS9 92A/95M

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Vibration
damper
(RoBo diaphragm) : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 104
Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.35
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 217.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 7.0

Spreed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rack travel in mm : 6.00
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : +- 4.0

Check tolerance
cm3/1000S. : +- 6.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 217.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 7.0

Spreed

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : +- 4.0

control lever
position degree : 84.0
tolerance degree : +- 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 15.30

Rated speed rpm : 788
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 15.30

Rated speed rpm : 789
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 15.30

Rated speed rpm : 790
Tolerance 1/min : +- 4

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 15.30

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 15.30

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 15.30

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 16.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 740
rack travel mm : 15.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97
Test oil : ISO 4113
Combination No. : 0 402 678 832a
Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0 412 628 893
Governor
Governor design. : RSV350...1050P8A652
Governor no. : 0 421 833 569

Cust. part No. : 1391878 - Version B

Customer-spec. information
Customer : SCANIA
Motor : DS(C,I)14...A

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : +- 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.95
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 256.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.60

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 256.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : +- 4.0

control lever
position degree : 107.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.90

Rated speed rpm : 1095

Tolerance 1/min : +- 5

Check
speed 1/min : +- 10

rack travel mm : 4.00

Rated speed rpm : 1205

Tolerance 1/min : +- 15

Check
speed 1/min : +- 20

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1305

LOW IDLE

control lever
position degree : 76.0
tolerance degree : +- 4.0

control lever
position degree : 26.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 4.10

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 630
rack travel mm : 12.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97
Test oil : ISO 4113

Combination No. : 0 402 678 832C

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0 412 628 893

Governor
Governor design. : RSV350...1050P8A652
Governor no. : 0 421 833 569

Cust. part No. : 1391878 - Version C

Customer-spec. information
Customer : SCANIA
Motor : DS(C,I)14...A

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 271.0

Tolerance cm3/1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm3/1000S.	: ± 8.0
<hr/>	
Spreed	
<hr/>	
Tolerance cm3/1000 strokes	: 8.0
<hr/>	
Check tolerance cm3/1000S.	: 12.0
<hr/>	

Rated speed rpm	: 350
<hr/>	
Rack travel in mm	: 4.60
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 21.0
Tolerance cm3/1000 strokes	: ± 3.0
Check tolerance cm3/1000S.	: ± 6.0
Spreed	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
<hr/>	
governor spring pre-tension click setting x	: 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: 1500
Del. quantity cm3/1000 strokes	: 271.0

Tolerance cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 8.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 57.0
tolerance degree	: ± 4.0

control lever position degree	: 107.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 13.40
Rated speed rpm	: 1095
Tolerance 1/min	: ± 5
Check speed 1/min	: ± 10

rack travel mm	: 4.00
Rated speed rpm	: 1210
Tolerance 1/min	: ± 15
Check speed 1/min	: ± 20

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1360

LOW IDLE

control lever position degree	: 76.0
tolerance degree	: ± 4.0

control lever position degree	: 26.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 350
rack travel mm	: 4.10
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 420
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 630
rack travel mm : 12.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 249.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 5.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.97
Test oil : ISO 4113

Combination No. : 0 402 678 835

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RSV350...1050POA673
Governor no. : 0 421 833 590

Cust. part No. : 0270746802

Customer-spec. information
Customer : MB-NFZ
Motor : OM442LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 15.30
Tolerance mm : ± 0.05

Del. quantity	
cm3/1000 strokes :	272.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 4.0
Spreed	
Tolerance	
cm3/1000 strokes :	5.0
Check tolerance	
cm3/1000S. :	9.0

Rated speed rpm :	350
Rack travel in mm :	5.00
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	19.0
Tolerance	
cm3/1000 strokes :	+ 3.0
Check tolerance	
cm3/1000S. :	+ 6.0
Spreed	
Tolerance	
cm3/1000 strokes :	8.0
Check tolerance	
cm3/1000S. :	12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
governor spring	
pre-tension	
click setting x :	3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1050
-------------------	------

Aneroid pressure	
hPa :	1200
Del. quantity	
cm3/1000 strokes :	272.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 4.0
Spreed	
Tolerance	
cm3/1000 strokes :	5.0
Check tolerance	
cm3/1000S. :	9.0

CONTROL LEVER

control lever	
position degree :	96.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	14.30
Rated speed rpm :	1075
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1150
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1400

LOW IDLE

control lever	
position degree :	75.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	100
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CRT mm min. :	> 19.50
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Testing:

Rated speed rpm :	350
rack travel mm :	5.00
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	395
Tolerance 1/min :	+ 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 15.30
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 400
rack travel mm : 1.70
Tolerance mm : \pm 0.05

Pressure hPa : 1000
rack travel mm : 6.65
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.97

Test oil : ISO 4113

Combination No. : 0 402 744 801

Injection pump

Pump designation : PES4P120A32ORS7380

EP type number : 0 412 724 802

Governor

Governor design. : RQV275...1200PA1232K

Governor no. : 0 421 815 469

Cust. part No. : CCEP 5149B 66-237

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 04-02-26 B4

Power KW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 105

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 11.00

Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

°NW before FB : 0.30

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

mm : 21.00

and maximum rack

travel : 11.00

Difference ° CS : 1.50

CRT ZERO POSITION

Rack travel in mm : 12.80
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -6.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1272

guide sleeve
travel mm : 9.31

Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : \pm 0.20

Rated speed rpm : 894
guide sleeve
travel mm : 6.60
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1482

Rack travel in mm : 11.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 296.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1265

Tolerance 1/min : \pm 15
 rack travel mm : -8.80
 Rated speed rpm : 1410
 Tolerance 1/min : \pm 5
 rack travel mm : -12.30
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 253.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
 CRT mm min. : $<$ -4.70

Testing:

Rated speed rpm : 325
 rack travel mm : -6.80
 Tolerance mm : \pm 0.10
 Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1200
 Rated speed rpm : 700
 rack travel mm : -1.15
 Tolerance mm : \pm 0.10
 Rated speed rpm : 350
 rack travel mm : -2.90
 Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
 Pressure hPa : 1200
 Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : -4.10
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200
 Pressure hPa : 200
 rack travel mm : -3.40
 Tolerance mm : \pm 0.20
 Pressure hPa : 320
 rack travel mm : -2.75
 Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 155
 Rated speed rpm : $<$ 275
 Check
 speed 1/min : $>$ 135
 Check
 speed 1/min : $<$ 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 240.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 161.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 90.0
 Tolerance
 cm³/1000 strokes : \pm 15.0
 Check tolerance
 cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : -6.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.97
Test oil : ISO 4113

Combination No. : 0 402 744 808

Injection pump
Pump designation : PES4P120A32ORS7402
EP type number : 0 412 724 804

Governor
Governor design. : RQV275...1200PA1257
 : -1K
Governor no. : 0 421 815 553

Cust. part No. : CCEP5166 66-238

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 04-02-26 A4
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 125
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.10
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : -10.30
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 13.00
Difference ° CS : 2.40

CRT ZERO POSITION

Rack travel in mm : 13.40
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -8.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1260

guide sleeve
travel mm : 10.32

Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : \pm 0.20

Rated speed rpm : 938
guide sleeve
travel mm : 6.86
Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1450

Rack travel in mm : 12.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 298.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1245

Tolerance 1/min : \pm 5
rack travel mm : -9.40
Rated speed rpm : 1405
Tolerance 1/min : \pm 15

rack travel mm : -12.90
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 252.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : $<$ -7.40

Testing:

Rated speed rpm : 325
rack travel mm : -8.90
Tolerance mm : \pm 0.10

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 850
rack travel mm : -1.00
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : -6.00
Tolerance mm : \pm 0.20

Rated speed rpm : 700
rack travel mm : -1.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : -3.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1200

Pressure hPa : 200
rack travel mm : -2.40
Tolerance mm : \pm 0.20

Pressure hPa : 440
rack travel mm : -1.10
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 130
Rated speed rpm : $<$ 275

Check
speed 1/min : $>$ 110
check
speed 1/min : $<$ 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 249.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 183.0

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : -8.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 09.07.97

Test oil : ISO 4113

Combination No. : 0 402 746 607

Injection pump

Pump designation : PES6P120A720RS7409

EP type number : 0 412 726 956

Governor

Governer design. : RQV450...1100PA1270

Governer no. : 0 421 814 172

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor : 8465.41.014

Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet Line : EHAB

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 185

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 168.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1164
guide sleeve
travel mm : 7.81
Tolerance mm : \pm 0.15

Rated speed rpm : 450
guide sleeve
travel mm : 2.71
Tolerance mm : \pm 0.20

Rated speed rpm : 856
guide sleeve
travel mm : 5.85
Tolerance mm : \pm 0.25

Rated speed rpm : 580
guide sleeve
travel mm : 3.81
Tolerance mm : \pm 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 8.40
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.90
Rated speed rpm : 1150
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350

CRT mm min. : $>$ 6.80

Testing:

Rated speed rpm : 450
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 900
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Rated speed rpm : 700
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 700

Pressure hPa : 400
rack travel mm : 10.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.97
Test oil : ISO 4113

Combination No. : 0 402 746 610

Injection pump
Pump designation : PES6P120A720RS7409
EP type number : 0 412 726 956

Governor
Governor design. : RQV450...1050PA1277
Governor no. : 0 421 814 173

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8465.41.016
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 180
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 450

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1110
guide sleeve
travel mm : 7.40
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.71
Tolerance mm : \pm 0.20

Rated speed rpm : 836
guide sleeve
travel mm : 5.75
Tolerance mm : \pm 0.25

Rated speed rpm : 580
guide sleeve
travel mm : 3.81
Tolerance mm : \pm 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1375

Rack travel in mm : 10.00
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 184.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.50
Rated speed rpm : 1095
Tolerance 1/min : \pm 5
Check
speed 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : \pm 15
Check
speed 1/min : \pm 20

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
CRT mm min. : $>$ 6.70

Testing:

Rated speed rpm : 450
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 440

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 10.85
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 600

Pressure hPa : 360
rack travel mm : 11.30
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 203.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.97
Test oil : ISO 4113

Combination No. : 0 402 846 081

Injection pump
Pump designation : PE6P120A32ORS8044
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...950PA1355K
Governor no. : 0 421 815 962

Cust. part No. : 11127026
: -P02 V.08/96

Customer-spec. information
Customer : VCE
Motor : TD122KLE
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.20

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 80.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1037
guide sleeve
travel mm : 9.86
Tolerance mm : +- 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.61
Tolerance mm : +- 0.20

Rated speed rpm : 773
guide sleeve
travel mm : 6.81
Tolerance mm : +- 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 4.00
Tolerance mm : +- 0.25

Rated speed rpm : 1280
guide sleeve
travel mm : 13.50

Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 11.62
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : +- 4.0

control lever
position degree : 118.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1015
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1100
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1210

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 6.56

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.80
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1500
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 10.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 570
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure

hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.97
Test oil : ISO 4113
Combination No. : 0 402 890 301
Injection pump
Pump designation : PE12P120A520LS8525
EP type number : 0 412 820 203
Governor
Governor design. : RE30
Governor no. : 0 421 890 040

Cust. part No. : 51.11103-7552

Customer-spec. information

Customer : MAN
Motor : D 2842 LE 404
Power KW : 956.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1A- 5-9A- 8- 3A- 4
: -11A- 10- 2A- 6
: - 7A

Phasing : 0-15-60-75-120-135
: -180-195-240-255
: -300-315
Tolerance : ± 0.50

Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 12

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1150
Uact V : 3.360
Del. quantity
cm³/1000 strokes : 332.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Uact V : 2.220
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : +/- 5.0
Check tolerance
cm³/1000S. : +/- 9.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger

barrel assemblies.

Rated speed rpm : 500
Uact V : 1.940
Del. quantity
cm³/1000 strokes : 0.1
Tolerance
cm³/1000 strokes : ± 0.1
Check tolerance
cm³/1000S. : ± 0.1

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Rated speed rpm : 500
Uact V : 2.160
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 15.0

TEST POINT L1

Delivery for standard plunger/barrel
assemblies.
Zero delivery for shutoff assemblies
(refer to cam sequence).

Rated speed rpm : 300
Uact V : 1.600
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.080
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.97
Test oil : ISO 4113

Combination No. : 0 403 246 056

Injection pump
Pump designation : PES6MW100/720RS1527
EP type number : 0 413 206 026

Governor
Governor design. : RQV300...1300MW157
Governor no. : 0 420 083 343

Cust. part No. : 0270740502

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1354
guide sleeve
travel mm : 6.71
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.01
Tolerance mm : \pm 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 4.76
Tolerance mm : \pm 0.25

Rated speed rpm : 710
guide sleeve
travel mm : 3.03
Tolerance mm : \pm 0.25

Rated speed rpm : 1683
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1780

guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 117
Rated speed rpm : 1500

Rack travel in mm : 9.00
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 133.0
Tolerance

cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 4.30

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.45
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 14.45
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.40
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 600
rack travel mm : 4.20
Tolerance mm : + 0.10

Pressure hPa : 250
rack travel mm : 1.00
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 132.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 5.0
Speed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 52.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 160.0
Tolerance
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.00
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.09.96
Test oil : ISO 4113
Combination No. : 0 401 848 829
Injection pump
Pump designation : PE8P110A320LS3865
EP type number : C 411 818 728
Governor
Governor design. : RQ250/1150PA1250
Governor no. : 0 421 801 796

Cust. part No. :

Customer-spec. information
Customer : DHI
Motor : V2-8NA

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.80
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 8.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1209
guide sleeve
travel mm : 7.49
Tolerance mm : \pm 0.15

Rated speed rpm : 250
guide sleeve
travel mm : 1.59
Tolerance mm : \pm 0.20

Rated speed rpm : 1150
guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 411
guide sleeve
travel mm : 5.37
Tolerance mm : \pm 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1340
guide sleeve
travel mm : 11.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 700

Rack travel in mm : 15.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 36.0
tolerance degree : \pm 4.0

control lever
position degree : 98.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1203
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

control lever
position degree : 14.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRT mm min. : > 9.90

Testing:

Rated speed rpm : 250
rack travel mm : 8.10
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : +- 20

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 11.80
Tolerance mm : +- 0.05

Rated speed rpm : 650
rack travel mm : 11.80
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 170

Check
speed 1/min : > 80
Check
speed 1/min : < 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 127.0
Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 135.0
Tolerance
cm3/1000 strokes : +- 20.0
Check tolerance
cm3/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 8.10
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 25.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.09.96

Test oil : ISO 4113

Combination No. : 0 401 848 830

Injection pump

Pump designation : PE8P110A320LS3865

EP type number : 0 411 818 728

Governor

Governor design. : RQV250...1000PA1286

Governor no. : 0 421 814 175

Cust. part No. :

Customer-spec. information

Customer : DHI

Motor : V2-8TC

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00

Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 142.0
Tolerance cm3/1000 strokes	: \pm 1.0
Check tolerance cm3/1000S.	: \pm 4.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 10.0

Rated speed rpm	: 250
Rack travel in mm	: 8.20
Tolerance mm	: \pm 0.10
Del. quantity cm3/1000 strokes	: 25.0
Tolerance cm3/1000 strokes	: \pm 3.0
Check tolerance cm3/1000S.	: \pm 6.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1058
guide sleeve travel mm	: 8.56
Tolerance mm	: \pm 0.15
Rated speed rpm	: 250
guide sleeve travel mm	: 1.31
Tolerance mm	: \pm 0.20
Rated speed rpm	: 666
guide sleeve travel mm	: 5.29
Tolerance mm	: \pm 0.25
Rated speed rpm	: 380

guide sleeve travel mm	: 3.20
Tolerance mm	: \pm 0.25

Rated speed rpm	: 1300
guide sleeve travel mm	: 11.50
Tolerance mm	: \pm 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1120

Rack travel in mm	: 12.00
Tolerance mm	: \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure hPa	: -
Del. quantity cm3/1000 strokes	: 142.0
Tolerance cm3/1000 strokes	: \pm 1.0
Check tolerance cm3/1000S.	: \pm 4.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 10.0

CONTROL LEVER

control lever position degree	: 65.0
tolerance degree	: \pm 4.0

control lever position degree	: 120.0
tolerance degree	: \pm 4.0

RATED SPEED	
rack travel mm	: 12.00
Rated speed rpm	: 1045
Tolerance 1/min	: \pm 5

rack travel mm	: 4.00
Rated speed rpm	: 1155
Tolerance 1/min	: \pm 15

rack travel mm	: 0.50
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Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

control lever
position degree : 16.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : $>$ 9.60

Testing:

Rated speed rpm : 250
rack travel mm : 8.20
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 13.00
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 190

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650

F03

Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 8.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.09.96
Test oil : ISO 4113

Combination No. : 0 402 074 700

Injection pump
Pump designation : PES4Pi10B72CRS3383
EP type number : 0 412 014 701

Governor
Governor design. : RSV300...1100P1A667
Governor no. : 0 421 833 582

Cust. part No. : 9880955

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI-E A2
Power KW : 147.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 207.0
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

F04

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 189.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.5

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 4.00
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 5.5

Spreed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1420

Del. quantity
cm3/1000 strokes : 189.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.5

Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1030
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : + 15

Tolerance mm : + 0.55

rack travel mm : 4.00
Rated speed rpm : 1095
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.80
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 400
rack travel mm : 4.00
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.00
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 13.00
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1420
rack travel mm : 1.80
Tolerance mm : ± 0.10

Rated speed rpm : 550
Pressure hPa : -
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 910
rack travel mm : 1.20
Tolerance mm : ± 0.05

Pressure hPa : 820
rack travel mm : 0.40
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1420
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1420
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 203.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Intake CRT corresponds to 0 mm CRT
with LDA test.

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.5
Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.96

Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump

Pump designation : PE6P120A32ORS7412

EP type number : 0 412 626 953

Governor

Governor design. : RQV275...1000PA1278K

Governor no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer-spec. information

Customer : DAF

Motor : XF 315 M

Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 140

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

F07

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.10

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 327.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.00
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1077
guide sleeve
travel mm : 10.24
Tolerance mm : +- 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : +- 0.20

Rated speed rpm : 704
guide sleeve
travel mm : 6.53
Tolerance mm : +- 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : +- 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1158

Rack travel in mm : 12.00
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 327.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 12.10
Rated speed rpm : 1050
Tolerance 1/min : +- 5
Check
speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.50

Tolerance mm : +- 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 72.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 4.00
Tolerance mm : +- 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.10
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 12.85
Tolerance mm : +- 0.05

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : +- 0.10

Rated speed rpm : 600
rack travel mm : 11.95
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : +- 0.10

Rated speed rpm : 1000
rack travel mm : 13.10
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.10
Tolerance mm : +- 0.05

Rated speed rpm : 980
Pressure hPa : -
rack travel mm : 7.75
Tolerance mm : +- 0.20

MEASUREMENT

Rated speed rpm : 980

Pressure hPa : 650
rack travel mm : 11.50
Tolerance mm : +- 0.05

Pressure hPa : 250
rack travel mm : 8.75
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 344.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 192.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.00

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 17.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.96
Test oil : ISO 4113

Combination No. : 0 402 646 670

Injection pump
Pump designation : PE6P120A320RS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...115CPA1296K
Governor no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information
Customer : DAF
Motor : PF 230 M
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity	
cm ³ /1000 strokes	: 228.0
Tolerance	
cm ³ /1000 strokes	: +- 1.0
Check tolerance	
cm ³ /1000S.	: +- 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: 5.00
Tolerance mm	: +- 0.10
Del. quantity	
cm ³ /1000 strokes	: 16.0
Tolerance	
cm ³ /1000 strokes	: +- 3.0
Check tolerance	
cm ³ /1000S.	: +- 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1201
guide sleeve	
travel mm	: 10.07
Tolerance mm	: +- 0.15

Rated speed rpm	: 275
guide sleeve	
travel mm	: 1.71
Tolerance mm	: +- 0.20

Rated speed rpm	: 811
guide sleeve	
travel mm	: 6.79
Tolerance mm	: +- 0.25

Rated speed rpm	: 450
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guide sleeve	
travel mm	: 3.85
Tolerance mm	: +- 0.25

Rated speed rpm	: 1480
guide sleeve	
travel mm	: 13.50
Tolerance mm	: +- 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1321

Rack travel in mm	: 12.25
Tolerance mm	: +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1130
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm ³ /1000 strokes	: 228.0
Tolerance	
cm ³ /1000 strokes	: +- 1.0
Check tolerance	
cm ³ /1000S.	: +- 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 5.0
Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 119.0
tolerance degree	: +- 4.0

RATED SPEED	
rack travel mm	: 12.00
Rated speed rpm	: 1190
Tolerance 1/min	: +- 5
Check	
speed 1/min	: +- 10

rack travel mm	: 4.00
Rated speed rpm	: 1315
Tolerance 1/min	: +- 15
Check	
speed 1/min	: +- 20

rack travel mm	: 0.70
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Tolerance mm : \pm 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 7.60

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.00
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.55
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 375
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 875

Pressure hPa : 490
rack travel mm : 11.50
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.45
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.06.96
Test oil : ISO 4113

Combination No. : 0 402 648 904

Injection pump
Pump designation : PE8P120A320LS7801-1
EP type number : 0 412 628 818

Governor
Governor design. : RQV350...1050PA866
: -9
Governor no. : 0 421 813 906

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 A
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 13.90
Tolerance mm : ± 0.10

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 13.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1107
guide sleeve
travel mm : 8.05
Tolerance mm : ± 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.55

Tolerance mm : ± 0.25

Rated speed rpm : 570
guide sleeve
travel mm : 3.55
Tolerance mm : ± 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 5.65
Tolerance mm : ± 0.25

Rated speed rpm : 1204
guide sleeve
travel mm : 10.05
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1130

Rack travel in mm : 17.25
Tolerance mm : ± 0.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1095

Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm	:	4.00
Rated speed rpm	:	1175
Tolerance 1/min	:	± 15
Check speed 1/min	:	± 20
rack travel mm	:	0.75
Tolerance mm	:	± 0.75
Rated speed rpm	:	1300

LOW IDLE

control lever position degree	:	70.0
tolerance degree	:	± 4.0

Setting point w/out bumper spring

Rated speed rpm	:	100
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CRT mm min.	:	> 6.90
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Testing:

Rated speed rpm	:	350
rack travel mm	:	5.30
Tolerance mm	:	± 0.10

Rated speed rpm	:	450
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TORQUE CONTROL

Rated speed rpm	:	500
rack travel mm	:	13.90
Tolerance mm	:	± 0.10

Rated speed rpm	:	1050
rack travel mm	:	12.70
Tolerance mm	:	± 0.10

Rated speed rpm	:	750
rack travel mm	:	14.10
Tolerance mm	:	± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm	:	600
Pressure hPa	:	700

MEASUREMENT

Pressure hPa	:	400
rack travel mm	:	-1.50
Tolerance mm	:	± 0.05

Pressure hPa	:	475
rack travel mm	:	-0.60
Tolerance mm	:	± 0.10

Pressure hPa	:	925
rack travel mm	:	0.15
Tolerance mm	:	± 0.05

Start interlock

Rated speed rpm	:	> 100
Rated speed rpm	:	< 270

Check speed 1/min	:	> 80
Check speed 1/min	:	< 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	1100
Rated speed rpm	:	1050
Del. quantity cm3/1000 strokes	:	182.5
Tolerance cm3/1000 strokes	:	± 1.5
Check tolerance cm3/1000S.	:	± 4.5
Spread Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000S.	:	12.0

Aneroid pressure hPa	:	1100
Rated speed rpm	:	750
Del. quantity cm3/1000 strokes	:	215.0
Tolerance cm3/1000 strokes	:	± 2.0
Check tolerance cm3/1000S.	:	± 5.0
Spread Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000S.	:	12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.96
Test oil : ISO 4113

Combination No. : 0 402 736 896

Injection pump
Pump designation : PES6P120A720/3LS7251
: -1

EP type number : 0 412 726 926

Governor
Governor design. : RQV300...1000PA962
: -14K
Governor no. : 0 421 815 499

Cust. part No. : 51.11103-7497

Customer-spec. information
Customer : MAN
Motor : D2866 LF06
Power KW : 309.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Overflow quantity
min. l/h : 200
Tolerance l/h : +- 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 4.85
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 13.00
Tolerance mm : +- 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300

Tolerance : +- 0.50
Check
tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.10
Check
tolerance °NW : +- 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 300

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1056
guide sleeve
travel mm : 8.01
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 2.65
Tolerance mm : \pm 0.20

Rated speed rpm : 622
guide sleeve
travel mm : 4.85
Tolerance mm : \pm 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 3.82
Tolerance mm : \pm 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 11.70
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 285.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.70
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 245.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.30

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 220
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Pressure hPa : 720
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.96
Test oil : ISO 4113

Combination No. : 0 402 846 053

Injection pump
Pump designation : PE6P120A320RS8015
EP type number : 0 412 826 016

Governor
Governor design. : RQV300...1050PA1027K
Governor no. : 0 421 815 311

Cust. part No. : 11031702
: -P03 V.09/95

Customer-spec. information
Customer : VCE
Motor : TD122KHE

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 10.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1096
guide sleeve

travel mm : 9.66
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 2.09
Tolerance mm : \pm 0.25

Rated speed rpm : 771
guide sleeve
travel mm : 6.39
Tolerance mm : \pm 0.25

Rated speed rpm : 316
guide sleeve
travel mm : 2.30

Tolerance mm : \pm 0.25

Rated speed rpm : 366
guide sleeve
travel mm : 2.96
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.79
Tolerance mm : \pm 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 8.50
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : \pm 4.0

control lever
position degree : 115.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 9.30

Rated speed rpm : 1085
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1165
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1270

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

control lever
position degree : 19.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 5.80

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 10.00
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 10.30
Tolerance mm : + 0.10

Rated speed rpm : 550
rack travel mm : 10.90
Tolerance mm : + 0.10

Rated speed rpm : 690
rack travel mm : 10.30
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1500
rack travel mm : 10.90
Tolerance mm : + 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 640
rack travel mm : 2.00
Tolerance mm : + 0.10

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 286.5
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.09.96
Test oil : ISO 4113

Combination No. : 0 402 846 057

Injection pump
Pump designation : PE6P120A320RS8024
EP type number : 0 412 826 025

Governor
Governor design. : RQV250...1100PA1072
: -1K
Governor no. : 0 421 815 988

Cust. part No. : 477814P05 prel.08.96

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD74EB
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 204.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : + 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 2.24
Tolerance mm : + 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.39
Tolerance mm : + 0.25

Rated speed rpm : 307
guide sleeve
travel mm : 2.29
Tolerance mm : + 0.25

Rated speed rpm : 357

guide sleeve
travel mm : 2.97
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.22
Tolerance mm : + 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 7.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 204.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : + 4.0

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.05
Rated speed rpm : 1165
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1255
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 18.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 10.70
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 13.05

Tolerance mm : \pm 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1100
Pressure hPa : 1010
rack travel mm : 5.40
Tolerance mm : \pm 0.20

Pressure hPa : 120
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 232.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.60

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 18.09.96
Test oil : ISO 4113

Combination No. : 0 402 846 061

Injection pump
Pump designation : PE6P120A320RS8024-1
EP type number : 0 412 826 029

Governor
Governor design. : RQV250...1100PA1072
: -3K
Governor no. : 0 421 815 979

Cust. part No. : 477950-P05 v. 11.95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD74 EU
Power kW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 175.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 23.0

Tolerance
cm3/1000 strokes : + 2.5

Check tolerance
cm3/1000S. : + 5.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : + 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.39
Tolerance mm : + 0.25

Rated speed rpm : 307
guide sleeve
travel mm : 2.29
Tolerance mm : + 0.25

Rated speed rpm : 357

guide sleeve
travel mm : 2.97
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.22
Tolerance mm : + 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 7.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 175.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 72.0
tolerance degree : + 4.0

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.40
Rated speed rpm : 1165
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 65.0
tolerance degree : +- 4.0

control lever
position degree : 19.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : +- 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.40
Tolerance mm : +- 0.05

Rated speed rpm : 650
rack travel mm : 9.10
Tolerance mm : +- 0.10

Rated speed rpm : 300
rack travel mm : 8.30
Tolerance mm : +- 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 11.40

G05

Tolerance mm : +- 0.10
Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.20
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 1100
Pressure hPa : 580
rack travel mm : 3.50
Tolerance mm : +- 0.20
Pressure hPa : 120
rack travel mm : 0.25
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 159.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 5.0
Spreed
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 114.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.40

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 16.09.96

Test oil : ISO 4113

Combination No. : 0 402 846 079

Injection pump

Pump designation : PE6P120A320RS8044

EP type number : 0 412 826 036

Governor

Governer design. : RQV300...1050PA1141

Governer no. : 0 421 814 091

Cust. part No. : 11031994

: -P01 V.08.96

Customer-spec. information

Customer : VCE

Motor : TD122KFE

Power KW : 297.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 103

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.50

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 11.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1132
guide sleeve
travel mm : 8.52
Tolerance mm : \pm 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 2.03
Tolerance mm : \pm 0.20

Rated speed rpm : 1039
guide sleeve
travel mm : 7.00

Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : \pm 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 11.10
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : \pm 4.0

control lever
position degree : 128.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.30
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1190

Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1280

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0

control lever
 position degree : 15.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
 CRT mm min. : > 6.00

Testing:

Rated speed rpm : 325
 rack travel mm : 3.80
 Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 11.30
 Tolerance mm : + 0.05

Rated speed rpm : 700
 rack travel mm : 10.45
 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1500
 rack travel mm : 12.25
 Tolerance mm : + 0.25

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 7.80
 Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850
 rack travel mm : 3.00
 Tolerance mm : + 0.20

Pressure hPa : 300
 rack travel mm : 0.25
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : > 230

Check
 speed 1/min : > 80
 Check
 speed 1/min : > 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 269.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000S. : 14.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 188.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.50

Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 17.09.96
 Test oil : ISO 4113
 Combination No. : 0 403 244 056
 Injection pump
 Pump designation : PES4MW100/720RS1525
 EP type number : 0 413 204 022

Governor
 Governor design. : RQ300/1300MW160
 Governor no. : 0 420 082 077

Cust. part No. : 0270749502

Customer-spec. information
 Customer : MB-NFZ
 Motor : CM364LA
 Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
 Test oil inlet
 temp. °C : 40
 Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
 assembly : 1 688 901 101

Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
 Tolerance bar : ± 1.0

Prestroke mm : 4.55
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10

Rack travel in mm : 20.00
 Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance : ± 0.50
 Check
 tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30
 Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 119.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
guide sleeve
travel mm : 7.45
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.74
Tolerance mm : \pm 0.20

Rated speed rpm : 1300
guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 379
guide sleeve
travel mm : 3.45
Tolerance mm : \pm 0.10

Rated speed rpm : 790
guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1540
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : VL

control lever
position degree : 109
Rated speed rpm : 800

Rack travel in mm : 16.50
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1445
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1575

LOW IDLE

control lever
position degree : 64.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 5.50

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 2.30
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

REDUCED QUANTITY

Aneroid pressure

hPa : 1200
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 3.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.09.96
Test oil : ISO 4113

Combination No. : 0 401 876 754

Injection pump
Pump designation : PE6P110B320RS3152
EP type number : 0 411 816 799

Governor
Governor design. : RSV200...1100P1A659
Governor no. : 0 421 833 577

Cust. part No. : 3826523-P01 v.08.96

Customer-spec. information
Customer : VOLVO-PENTA
Motor : TD100G
Power KW : 203.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 200

Rack travel in mm : 4.00

Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 21.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed

Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 173.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0

control lever
position degree : 112.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1130
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

control lever
position degree : 24.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
rack travel mm : 3.50
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 200
rack travel mm : 4.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 260
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.70
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.70
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 220
rack travel mm : 10.50
Tolerance mm : + 0.20

Pressure hPa : 580
rack travel mm : 12.45
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 200
Rack travel in mm : 4.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.09.96
Test oil : ISO 4113

Combination No. : 0 401 876 755

Injection pump
Pump designation : PE6P120B320RS3187
EP type number : 0 411 826 818

Governor
Governor design. : RSV250...1100P1A653
Governor no. : 0 421 833 571

Cust. part No. : 3826534
: -P01 v. 08.96

Customer-spec. information
Customer : VOLVO-PENTA
Motor : TD121G
Power KW : 256.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 210.5

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Speed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

Rated speed rpm	: 200
Rack travel in mm	: 4.00
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 27.0
Tolerance	
cm3/1000 strokes	: + 2.5
Check tolerance	
cm3/1000S.	: + 5.0
Speed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring	
pre-tension	
click setting x	: 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm3/1000 strokes	: 210.5

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Speed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 60.0
tolerance degree	: + 4.0

control lever	
position degree	: 112.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.50
Rated speed rpm	: 1130
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1185
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1300

LOW IDLE

control lever	
position degree	: 76.0
tolerance degree	: + 4.0

control lever	
position degree	: 24.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 200
rack travel mm	: 3.50
Tolerance mm	: + 0.10

Testing:

Rated speed rpm	: 200
rack travel mm	: 4.00
Tolerance mm	: + 0.10

rack travel mm : 2.00
Rated speed rpm : 260
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.50
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.20
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 530
rack travel mm : 11.50
Tolerance mm : + 0.20

Pressure hPa : 760
rack travel mm : 12.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 178.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 265.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 200

Rack travel in mm : 4.00
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 strokes : + 2.5
Check tolerance
cm3/1000S. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.09.96

Test oil : ISO 4113

Combination No. : 0 402 648 786

Injection pump
Pump designation : PE8P120A320LS7900
EP type number : 0 412 628 917

Governor
Governor design. : RQV350...1050PA1309
Governor no. : 0 421 814 182

Cust. part No. : 0270742802

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 077

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 90
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.25
Tolerance mm : ± 0.05

Del. quantity	
cm ³ /1000 strokes :	239.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 4.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	6.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	9.0
<hr/>	

Rated speed rpm :	350
<hr/>	
Rack travel in mm :	5.60
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	19.0
Tolerance	
cm ³ /1000 strokes :	+ 3.0
Check tolerance	
cm ³ /1000S. :	+ 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S. :	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	1098
guide sleeve	
travel mm :	9.44
Tolerance mm :	+ 0.15
<hr/>	
Rated speed rpm :	350
guide sleeve	
travel mm :	1.18
Tolerance mm :	+ 0.20
<hr/>	
Rated speed rpm :	500
guide sleeve	
travel mm :	2.69
Tolerance mm :	+ 0.25
<hr/>	
Rated speed rpm :	1320

guide sleeve	
travel mm :	13.50
Tolerance mm :	+ 0.50

GUIDE SLEEVE POSITION

control lever	
position degree :	- 1
Rated speed rpm :	1215

Rack travel in mm :	12.90
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	600
Aneroid pressure	
hPa :	1000
Del. quantity	
cm ³ /1000 strokes :	239.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 4.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	6.0
Check tolerance	
cm ³ /1000S. :	9.0

CONTROL LEVER

control lever	
position degree :	102.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	12.90
Rated speed rpm :	1085
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1170
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1300

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : $>$ 9.20

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 250
rack travel mm : 0.35
Tolerance mm : \pm 0.05

Pressure hPa : 600
rack travel mm : 2.25
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

REDUCED QUANTITY

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.60

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 19.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.08.96
Test oil : ISO 4113
Combination No. : 0 402 676 830
Injection pump
Pump designation : PE6P120A320LS7894
EP type number : 0 412 626 954
Governor
Governor design. : RSV600...1050POA642
Governor no. : 0 421 833 556

Cust. part No. : 0270746002

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 285.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 077
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-45-120-165-240
: -285
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 600

Rack travel in mm : 4.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 83.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70

Rated speed rpm : 1115

Tolerance 1/min : \pm 5

Check
speed 1/min : \pm 10

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 600

rack travel mm : 4.10

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 630

Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1075
rack travel mm : 13.70
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.75
Tolerance mm : ± 0.10

Rated speed rpm : 1000
rack travel mm : 14.35
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 291.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 600
Rack travel in mm : 4.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.96
Test oil : ISO 4113

Combination No. : 0 402 676 835

Injection pump
Pump designation : PE6P120A320RS7428
EP type number : 0 412 626 959

Governor
Governor design. : RSV300...850P1A594
: -2
Governor no. : 0 421 833 479

Cust. part No. : 11031996 P01 v.08.96

Customer-spec. information

Customer : VCE
Motor : TD 122 KKE
Power KW : 237.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 253.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 330

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 253.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 50.0
tolerance degree : \pm 4.0

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.40
Rated speed rpm : 870
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 905
Tolerance 1/min : \pm 15

rack travel mm : 0.80
Tolerance mm : \pm 0.50
Rated speed rpm : 1070

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

control lever
position degree : 25.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 330
rack travel mm : 3.40
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 330
rack travel mm : 3.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.40
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 9.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 9.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.40
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 1.70
Tolerance mm : \pm 0.20

Pressure hPa : 260
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

H02

Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 247.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000S. : 14.0

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 192.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm3/1000 strokes : 145.0
Tolerance
cm3/1000 strokes : \pm 15.0
Check tolerance
cm3/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 330
Rack travel in mm : 3.90
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 45.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.96

Test oil : ISO 4113

Combination No. : 0 402 748 812

Injection pump

Pump designation : PES8P120A720LS7425

EP type number : 0 412 728 814

Governor

Governor design. : RQV350...1200PA1310K

Governor no. : 0 421 815 541

Cust. part No. : CCEP 5164 66-136

Customer-spec. information

Customer : RENAULT V.I.

Motor : MACK E9-750

Power KW : 552.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.00

Tolerance mm : ± 0.50

Firing order : 1- 2- 7- 8- 4

: - 5- 6- 3

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

°NW after s.o.d. : 4.20

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.

mm : 21.00

and maximum rack

travel : 19.50

Difference °CS : 3.90

CRT ZERO POSITION

Rack travel in mm : 13.30
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 305.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : -6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 53.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1255

guide sleeve
travel mm : 9.50
Tolerance mm : \pm 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.90

H05

Tolerance mm : \pm 0.20

Rated speed rpm : 833
guide sleeve
travel mm : 5.90
Tolerance mm : \pm 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.27
Tolerance mm : \pm 0.25

Rated speed rpm : 1570
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1408

Rack travel in mm : 12.30
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 305.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1250
Tolerance 1/min : \pm 5
rack travel mm : -9.30

Rated speed rpm : 1370
Tolerance 1/min : + 15

rack travel mm : -12.75
Tolerance mm : + 0.55
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : -6.30
Tolerance mm : + 0.10

Rated speed rpm : 225

CRT mm max. : < -4.20

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 900
rack travel mm : -0.65
Tolerance mm : + 0.10

Rated speed rpm : 600
rack travel mm : -1.60
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -3.30
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1200

H06

Pressure hPa : 640
rack travel mm : -2.60
Tolerance mm : + 0.20

Pressure hPa : 950
rack travel mm : -0.75
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 120
Rated speed rpm : < 230

Check
speed 1/min : > 100
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 293.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 188.5
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Del. quantity
cm3/1000 strokes : 460.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : -6.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.96
Test oil : ISO 4113

Combination No. : 0 402 846 076

Injection pump
Pump designation : PE6P120A320RS8043
EP type number : 0 412 862 035

Governor
Governor design. : RQV300...1100PA1248
Governor no. : 0 421 814 165

Cust. part No. : 11031330
: -P01 v.08.96

Customer-spec. information
Customer : VCE
Motor : TD 103 KBE
Power KW : 216.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

H08

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 330

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 29.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1140
guide sleeve
travel mm : 7.71
Tolerance mm : \pm 0.15

Rated speed rpm : 330
guide sleeve
travel mm : 2.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1080
guide sleeve
travel mm : 6.80
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : \pm 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1249

Rack travel in mm : 10.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 114.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.00
Rated speed rpm : 1130
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 230

CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 330
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.60
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 2.10
Tolerance mm : \pm 0.20

Pressure hPa : 230
rack travel mm : 0.25

H10

Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 330

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.09.96
Test oil : ISO 4113

Combination No. : 0 402 846 077

Injection pump
Pump designation : PE6P120A320RS8043
EP type number : 0 412 826 035

Governor
Governor design. : RQV300...1050PA1247
Governor no. : 0 421 814 163

Cust. part No. : 11031331-P01v.08.96

Customer-spec. information

Customer : VCE
Motor : TD 103 KCE
Power kW : 189.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 165
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 320

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1102
guide sleeve

travel mm : 7.80
Tolerance mm : ± 0.15

Rated speed rpm : 320

guide sleeve
travel mm : 1.34
Tolerance mm : ± 0.20

Rated speed rpm : 802

guide sleeve
travel mm : 5.18
Tolerance mm : ± 0.25

Rated speed rpm : 530

guide sleeve
travel mm : 3.11

Tolerance mm : ± 0.25

Rated speed rpm : 1400

guide sleeve
travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1259

Rack travel in mm : 9.80

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 318.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever

position degree : 45.0

tolerance degree : ± 4.0

control lever

position degree : 111.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.60

Rated speed rpm : 1090

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1170

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 84.0
tolerance degree : \pm 4.0

control lever
position degree : 18.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 220
CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 320
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 10.60
Tolerance mm : \pm 0.10

Rated speed rpm : 720
rack travel mm : 10.90
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 2.80
Tolerance mm : \pm 0.20

Pressure hPa : 230
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 320

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.96
Test oil : ISO 4113

Combination No. : 0 402 846 078

Injection pump
Pump designation : PE6P120A32ORS8044
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...1050PA1225
Governor no. : 0 421 814 151

Cust. part No. : 11031993
: -P01 v.08/96

Customer-spec. information

Customer : VCE
Motor : TD122KAE
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 138
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 236.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1130
guide sleeve

travel mm : 8.50
Tolerance mm : \pm 0.15

Rated speed rpm : 325

guide sleeve
travel mm : 2.03
Tolerance mm : \pm 0.20

Rated speed rpm : 1039

guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67

Tolerance mm : \pm 0.25

Rated speed rpm : 1310

guide sleeve
travel mm : 11.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever

position degree : - 1

Rated speed rpm : 1201

Rack travel in mm : 8.40

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 236.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever

position degree : 62.0

tolerance degree : \pm 4.0

control lever

position degree : 126.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.30

Rated speed rpm : 1120

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1165

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1265

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : $>$ 7.73

Testing:

Rated speed rpm : 325
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 9.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 520
rack travel mm : 1.30
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 11.09.96

Test oil : ISO 4113

Combination No. : 0 403 246 047

Injection pump

Pump designation : PES6MW100/720RS1522

EP type number : 0 413 206 023

Governor

Governer design. : RQV300...1300MW148

: -4

Governer no. : 0 420 083 325

Cust. part No. : 0250744802

Customer-spec. information

Customer : MB-NFZ

Motor : OM366LA

Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.00

Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 118.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 4.5

Spread
Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1355
guide sleeve
travel mm : 9.32
Tolerance mm : +- 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.92
Tolerance mm : +- 0.25

Rated speed rpm : 1078
guide sleeve
travel mm : 7.06
Tolerance mm : +- 0.25

Rated speed rpm : 514
guide sleeve
travel mm : 2.14
Tolerance mm : +- 0.25

Rated speed rpm : 564
guide sleeve
travel mm : 2.60
Tolerance mm : +- 0.25

Rated speed rpm : 740
guide sleeve
travel mm : 3.93
Tolerance mm : +- 0.25

Rated speed rpm : 1720
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 123
Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 118.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 3.0

Spread
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 74.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 5.00

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : +- 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : +- 0.10

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 4.20
Tolerance mm : +- 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : +- 0.10

Start interlock

Rated speed rpm : > 100

H2O

Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 113.0
Tolerance
cm3/1000 strokes : +- 1.5
Check tolerance
cm3/1000S. : +- 4.0
Soreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 48.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : +- 5.0
Check tolerance
cm3/1000S. : +- 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.20
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.96
Test oil : ISO 4113
Combination No. : 0 403 246 050
Injection pump
Pump designation : PES6MW100/720RS1527
EP type number : 0 413 206 026
Governor
Governor design. : RQV300...1300MW132
: -16
Governor no. : 0 420 083 335
Cust. part No. : 0260749302

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

H22

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 4.00

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1353
guide sleeve
travel mm : 6.70
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.01
Tolerance mm : \pm 0.20

Rated speed rpm : 1090
guide sleeve
travel mm : 4.70
Tolerance mm : \pm 0.25

Rated speed rpm : 690
guide sleeve
travel mm : 2.97
Tolerance mm : \pm 0.25

Rated speed rpm : 1683
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : VL

control lever
position degree : 125
Rated speed rpm : 1480

Rack travel in mm : 10.00
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1480
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 490
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 500
rack travel mm : 3.15
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.96
Test oil : ISO 4113

Combination No. : 0 402 676 832

Injection pump
Pump designation : PE6P120A320LS7898
EP type number : 0 412 626 957

Governor
Governor design. : RSV350...1000POA648
Governor no. : 0 421 833 565

Cust. part No. : 0270748202

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 A
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.75

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 172.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 172.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1030
rack travel mm : 10.70

Rated speed rpm : 1105
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1031
rack travel mm : 10.70

Rated speed rpm : 1106
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1032
rack travel mm : 10.70

Rated speed rpm : 1107
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1033

rack travel mm : 10.70
Rated speed rpm : 1108
Tolerance 1/min : \pm 4
rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1034
rack travel mm : 10.70

Rated speed rpm : 1109
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

Rated speed rpm : 1035
rack travel mm : 10.70

Rated speed rpm : 1110
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 10.95
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 1.70
Tolerance mm : \pm 0.05

Rated speed rpm : 400
Pressure hPa : -
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 360
rack travel mm : 0.40
Tolerance mm : \pm 0.10

Pressure hPa : 480
rack travel mm : 1.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 400
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.09.96
Test oil : ISO 4113

Combination No. : 0 402 678 831

Injection pump
Pump designation : PE8P120A320LS7901
EP type number : 0 412 628 918

Governor
Governor design. : RSV350...105GPOA651
Governor no. : 0 412 833 568

Cust. part No. : 0270745602

Customer-spec. information
Customer : MB-NFZ
Motor : OM442LA
Power KW : 297.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 213.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : + 4.5

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.70

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.5

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 89.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1075
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 67.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.80
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 14.20

Tolerance mm : \pm 0.10
Rated speed rpm : 860
rack travel mm : 14.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 250
rack travel mm : 0.35
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 3.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.96

Test oil : ISO 4113

Combination No. : 0 402 678 834

Injection pump

Pump designation : PE8P120A320LS7903

EP type number : 0 412 628 920

Governor

Governor design. : RSV600...950POA663

Governor no. : 0 421 833 580

Cust. part No. : 027 074 4602

Customer-spec. information

Customer : MB-NFZ

Motor : OM442A

Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.50

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 930

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 600
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 930
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 92.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 970
rack travel mm : 11.90

Rated speed rpm : 1035
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 971
rack travel mm : 11.90

Rated speed rpm : 1036
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 972
rack travel mm : 11.90

Rated speed rpm : 1037
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 973
rack travel mm : 11.90

Rated speed rpm : 1038

Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 974
rack travel mm : 11.90

Rated speed rpm : 1039
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 975
rack travel mm : 11.90

Rated speed rpm : 1040
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55

LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 600
Tolerance mm : +- 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 930
rack travel mm : 12.90
Tolerance mm : +- 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 2.90
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : -
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 0.70
Tolerance mm : +- 0.10

Pressure hPa : 630
rack travel mm : 2.15
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 208.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 5.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 142.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

STARTING FUEL DELIVERY.

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 600
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.08.96

Test oil : ISO 4113

Combination No. : 0 402 646 742

Injection pump

Pump designation : PE6P120A320LS7837-2

EP type number : 0 412 626 943

Governor

Governor design. : RQ300/1100PA1272

Governor no. : 0 421 801 804

Cust. part No. : 0270743002

Customer-spec. information

Customer : MB-NFZ

Motor : OM441 LA

Power kW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 019

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 6

CRT ZERO POSITION

Rack travel in mm : 12.60

Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.60
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 193.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1153
guide sleeve
travel mm : 6.37
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.94

Tolerance mm : \pm 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 431
guide sleeve
travel mm : 4.71
Tolerance mm : \pm 0.10

Rated speed rpm : 570
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1350
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 650

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 600

Del. quantity
cm³/1000 strokes : 193.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1140
Tolerance 1/min : +- 8
Check
speed 1/min : +- 13

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : +- 15
Check
speed 1/min : +- 20

rack travel mm : 0.75
Tolerance mm : +- 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 9.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : +- 20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 12.60
Tolerance mm : +- 0.05

Rated speed rpm : 1100
rack travel mm : 13.70
Tolerance mm : +- 0.10

Rated speed rpm : 700
rack travel mm : 13.70
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 400
Pressure hPa : 600

MEASUREMENT

Pressure hPa : 350
rack travel mm : -0.80
Tolerance mm : +- 0.15

Pressure hPa : 200
rack travel mm : -2.00
Tolerance mm : +- 0.20

Pressure hPa : 975
rack travel mm : 0.50
Tolerance mm : +- 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000s. : +- 4.5
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 214.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.08.96
Test oil : ISO 4113
Combination No. : 0 402 746 609C
Injection pump
Pump designation : PES6P130A720RS7411
EP type number : 0 412 736 808

Governor
Governor design. : RQ275/950PA1274
Governor no. : 0 421 801 807

Cust. part No. : 221 575

Customer-spec. information
Customer : RABA
Motor : siehe Bemerkung

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 263.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 24.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread

Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(3) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1007
guide sleeve
travel mm : 6.56
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.06
Tolerance mm : + 0.20

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 361
guide sleeve
travel mm : 4.45
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 1059

Rack travel in mm : 10.90
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 263.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 34.0
tolerance degree : + 4.0

control lever
position degree : 96.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 12.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175

CRT mm min. : $>$ 6.80

Testing:

Rated speed rpm : 275
rack travel mm : 4.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 335
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 380
rack travel mm : 9.85
Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 12.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.08.96
Test oil : ISO 4113

Combination No. : 0 402 076 797

Injection pump
Pump designation : PES6P120A720RS3378
EP type number : 0 412 026 799

Governor
Governor design. : RSV450...1000P5A637
Governor no. : 0 421 833 548

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8365.26.541
Power kW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 240
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 9.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 125.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.20
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Spreed
Tolerance

cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure

hPa : -

Del. quantity
cm3/1000 strokes : 125.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 8.00

Rated speed rpm : 1070

Tolerance 1/min : +- 5

Check
speed 1/min : +- 10

rack travel mm : 4.00

Rated speed rpm : 1115

Tolerance 1/min : +- 15

Check
speed 1/min : +- 20

rack travel mm : 0.85

Tolerance mm : +- 0.55

Rated speed rpm : 1400

rack travel mm : 4.00

Rated speed rpm : 1125

Tolerance 1/min : +- 15

Check
speed 1/min : +- 20

LOW IDLE

control lever
position degree : 80.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 450

rack travel mm : 3.70

Tolerance mm : +- 0.10

Testing:

Rated speed rpm : 450

rack travel mm : 4.20

Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 560
Tolerance 1/min : \pm 50

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 9.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 9.05
Tolerance mm : \pm 0.10

Rated speed rpm : 330
rack travel mm : 9.60
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113

Combination No. : 0 402 735 810

Injection pump
Pump designation : PES5P120A720/3LS7310
EP type number : 0 412 725 817

Governor
Governor design. : RQ325/1000PA1106-1
Governor no. : 0 421 801 700

Cust. part No. : 3-7324

Customer-spec. information
Customer : MAN
Motor : D2865LUH06
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.80
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 43.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1071
guide sleeve
travel mm : 7.35
Tolerance mm : +- 0.10

Rated speed rpm : 325
guide sleeve
travel mm : 2.50
Tolerance mm : +- 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.01
Tolerance mm : +- 0.10

Rated speed rpm : 777
guide sleeve
travel mm : 7.01
Tolerance mm : +- 0.10

Rated speed rpm : 408

guide sleeve
travel mm : 4.50
Tolerance mm : +- 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 7.00
Tolerance mm : +- 0.10

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 700

Rack travel in mm : 15.50
Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1053
Tolerance 1/min : +- 8

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.10

2-stage LDA setting

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 10.80

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 9.00
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : 10.05
Tolerance mm : \pm 0.15

Pressure hPa : 1000
rack travel mm : 11.05
Tolerance mm : \pm 0.10

Pressure hPa : 1250
rack travel mm : 11.65
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113
Combination No. : 0 402 735 811
Injection pump
Pump designation : PES5P120A720/3LS7348
EP type number : 0 412 725 818
Governor
Governor design. : RQ325/1000PA1106-2
Governor no. : 0 421 801 750

Cust. part No. : 3-7392

Customer-spec. information
Customer : MAN
Motor : D2865LUH06
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.80
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 5

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 264.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 43.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1059
guide sleeve
travel mm : 7.34
Tolerance mm : +- 0.10

Rated speed rpm : 325
guide sleeve
travel mm : 2.50
Tolerance mm : +- 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.00
Tolerance mm : +- 0.10

Rated speed rpm : 401
guide sleeve
travel mm : 4.29
Tolerance mm : +- 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 7.00

Tolerance mm : +- 0.10

Rated speed rpm : 1210
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 700

Rack travel in mm : 15.50
Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.20
Rated speed rpm : 1053
Tolerance 1/min : +- 8

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.10

2-stage LDA setting

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 10.80

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 300
rack travel mm : 9.00
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : 10.05
Tolerance mm : \pm 0.15

Pressure hPa : 1000
rack travel mm : 11.05
Tolerance mm : \pm 0.10

Pressure hPa : 1250
rack travel mm : 11.65
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : 750
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 169.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.08.96
Test oil : ISO 4113

Combination No. : 0 402 744 805

Injection pump
Pump designation : PES4P120A320RS7312
: -1
EP type number : 0 412 724 803

Governor
Governor design. : RQ400/1200PA1319
Governor no. : 0 421 801 813

Cust. part No. : 51.11103-7553

Customer-spec. information

Customer : MAN
Motor : D 0824 LOH 05
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 087

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 40.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
guide sleeve
travel mm : 7.33
Tolerance mm : +- 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 2.94
Tolerance mm : +- 0.20

Rated speed rpm : 1200
guide sleeve
travel mm : 7.00
Tolerance mm : +- 0.10

Rated speed rpm : 443
guide sleeve
travel mm : 4.95
Tolerance mm : +- 0.10

Rated speed rpm : 530

guide sleeve
travel mm : 7.00
Tolerance mm : +- 0.10

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 1269

Rack travel in mm : 12.05
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.05
Rated speed rpm : 1250
Tolerance 1/min : +- 8

rack travel mm : 4.00
Rated speed rpm : 1335
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : $>$ -1.00

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 433
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : 9.20
Tolerance mm : \pm 0.15

Pressure hPa : 500
rack travel mm : 11.85
Tolerance mm : \pm 0.25

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 12.0

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.96
Test oil : ISO 4113

Combination No. : 0 403 476 146

Injection pump
Pump designation : PES6MW100/320RS1245
EP type number : 0 413 406 247

Governor
Governor design. : RSV300...1100MWOA400
Governor no. : 0 420 085 293

Cust. part No. : 11032700

Customer-spec. information
Customer : VCE
Motor : TD 63KDE
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 5.40
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.5

Spreed
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : +- 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 81.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 11.30
Rated speed rpm : 1145
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1265
Tolerance 1/min : +- 15

rack travel mm : 1.00
Tolerance mm : +- 0.70
Rated speed rpm : 1420

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : +- 15

LOW IDLE

control lever
position degree : 106.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.90
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : +- 0.10

rack travel mm : 2.00

Rated speed rpm : 580
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 13.90
Tolerance mm : + 0.10

Rated speed rpm : 820
rack travel mm : 12.80
Tolerance mm : + 0.20

Rated speed rpm : 770
rack travel mm : 13.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.90
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.05
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 290
rack travel mm : 13.00
Tolerance mm : + 0.10

Pressure hPa : 120
rack travel mm : 11.45
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 130.0

Tolerance
cm3/1000 strokes : + 1.5
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 77.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 100.0
Tolerance
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.40
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.5
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.06.97
Test oil : ISO-4113

Combination No. : 0 400 846 509

Injection pump
Pump designation : PES6A95D402LS2542
EP type number : 0 410 896 936

Governor
Governor design. : RQ250/1100AB1137-8L
Governor no. : 0 420 200 090

Cust. part No. :

Customer-spec. information
Customer : MAN
Motor : D2566 MUH

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Inlet press. bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 103.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 250
 Rack travel in mm : 7.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 5.50
 Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : -1
 Rated speed rpm : 600
 Rack travel in mm : 16.00
 Tolerance mm : ± 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 103.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 3.00
 Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

RATED SPEED

rack travel mm : 16.0
 Rated speed rpm : 600
 rack travel mm : 8.60
 Rated speed rpm : 1152.5
 Tolerance 1/min : ± 7.5
 rack travel mm : 4.00
 Rated speed rpm : 1230.0

Tolerance 1/min : ± 15.0
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1300

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 250
 rack travel mm : 7.0

Rated speed rpm : 100

CRT mm min. : 8.50

Testing:

Rated speed rpm : 250
 rack travel mm : 7.00
 Tolerance mm : ± 0.10

rack travel mm : 2.00
 Rated speed rpm : 400.0
 Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.80
 Rated speed rpm : 700
 rack travel mm : 11.15
 Tolerance mm : ± 0.05

Rated speed rpm : 600
 rack travel mm : 11.15
 Tolerance mm : ± 0.05

Rated speed rpm : 885
 rack travel mm : 10.70
 Tolerance mm : ± 0.10

Rated speed rpm : 980
 rack travel mm : 9.85
 Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 92.00

Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 7.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.50
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113

Combination No. : 0 400 846 569

Injection pump
Pump designation : PES6A95D32ORS2770
EP type number : 0 410 896 905

Governor
Governor design. : RQV350...1350AB1236
 : -3R
Governor no. : 0 420 213 112

Cust. part No. : 1811834C93

Customer-spec. information
Customer : NAVISTAR
Motor : DT 360
Power KW : 127.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 038

Inlet press. bar : 2.80

Test nozzle holde
assembly : 1 688 901 110

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1350

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 76.00

Tolerance
cm3/1000 strokes : ± 1.00

Check tolerance
cm3/1000s. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350.0

Rack travel in mm : 5.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Spreed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1350
guide sleeve
travel mm : 7.40
Tolerance mm : ± 0.10

Rated speed rpm : 1460
guide sleeve
travel mm : 8.30
Tolerance mm : ± 0.20

Rated speed rpm : 550
guide sleeve
travel mm : 3.40
Tolerance mm : ± 0.30

Rated speed rpm : 350
guide sleeve
travel mm : 1.50
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1350
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 76.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 50.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.40
Rated speed rpm : 1430.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00
Rated speed rpm : 1535.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.8

Rated speed rpm : 100

CRT mm min. : 9.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1350
rack travel mm : 11.45
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.45
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

rack travel mm : 8.75
Tolerance mm : ± 0.15

Pressure hPa : 240
rack travel mm : 9.35
Tolerance mm : ± 0.05

Pressure hPa : 480
rack travel mm : 10.90
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 290

Check
speed 1/min : 300

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 145.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 15.00

LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm : 5.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.89
Test oil : ISO-4113

Combination No. : 0 401 840 109

Injection pump
Pump designation : PE12P120A520/4LS857
EP type number : 0 411 820 035

Governor
Governor design. : RQV250...1050PA889
Governor no. : 0 421 813 696

Cust. part No. : 2-7906

Customer-spec. information
Customer : MAN
Motor : D2542TE60
Power KW : 361.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00
x length mm : 1000

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
 : - 3- 4- 11- 10
 : - 2- 6

Phasing : 0-45-60-105-120-165
 : -180-225-240-285
 : -300-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 8.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 146.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250.0

Rack travel in mm : 4.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.00
Tolerance mm : ± 0.20

Rated speed rpm : 700
guide sleeve
travel mm : 4.80
Tolerance mm : ± 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 7.50
Tolerance mm : ± 0.10

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : -1

Rated speed rpm : 1125

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 146.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 16.5
Rated speed rpm : 1125

rack travel mm : 7.20
Rated speed rpm : 1095.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1155.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 4.2

Rated speed rpm : 100

CRT mm min. : 5.70

Testing:

Rated speed rpm : 250
rack travel mm : 4.20
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 8.25
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 190

Check
speed 1/min : 210

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 4.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00
Tolerance

cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.03.90
Test oil : ISO-4113

Combination No. : 0 401 846 530

Injection pump
Pump designation : PE6P110A32ORS407-1
EP type number : 0 411 816 147

Governor
Governor design. : RQ275/1000PA818
Governor no. : 0 421 801 360

Cust. part No. :

Customer-spec. information
Customer : DAF
Motor : LT 160
Power kW : 160.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 135.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.50

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 275.0

Rack travel in mm : 7.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 16.50
Tolerance
cm³/1000 strokes : ± 2.50
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 600

Rack travel in mm : 16.00
Tolerance mm : ± 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.50
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

rack travel mm : 16.0
Rated speed rpm : 600

rack travel mm : 10.00
Rated speed rpm : 1037.5

Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1105.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
rack travel mm : 7.4

Rated speed rpm : 100

CRT mm min. : 8.60

Testing:

Rated speed rpm : 275
rack travel mm : 7.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 370.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.60
Rated speed rpm : 600
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 550
rack travel mm : 12.40
Tolerance mm : ± 0.10

Rated speed rpm : 745
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 880
rack travel mm : 11.35
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 980
Del. quantity
cm³/1000 strokes : 114.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 5.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 245.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 24.00

LOW IDLE

Rated speed rpm : 275.0
Rack travel in mm : 7.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.50
Tolerance
cm³/1000 strokes : \pm 2.50
Check tolerance
cm³/1000S. : \pm 5.00
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.12.89
Test oil : ISO-4113

Combination No. : 0 401 846 548

Injection pump
Pump designation : PE6P120A320RS257
EP type number : 0 411 826 075

Governor
Governor design. : RQ250/1100PA877
Governor no. : 0 421 801 409

Cust. part No. : 181335

Customer-spec. information
Customer : ENASA
Motor : 96T1AZ
Power KW : 228.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

K20

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 185.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250.0

Rack travel in mm : 5.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 550

Rack travel in mm : 16.00
Tolerance mm : ± 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 185.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.0
Rated speed rpm : 550

rack travel mm : 9.60
Rated speed rpm : 1152.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1205.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.6

Rated speed rpm : 100

CRT mm min. : 7.10

Testing:

Rated speed rpm : 250
rack travel mm : 5.60
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 360.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.20
Rated speed rpm : 600
rack travel mm : 10.95
Tolerance mm : ± 0.05

Rated speed rpm : 1080
rack travel mm : 10.70
Tolerance mm : ± 0.10

Rated speed rpm : 720
rack travel mm : 10.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.95
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : ± 0.20

Pressure hPa : 340
rack travel mm : 9.35
Tolerance mm : ± 0.05

Pressure hPa : 470
rack travel mm : 10.20
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1080
Del. quantity
cm³/1000 strokes : 201.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 140.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 5.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 06.04.90
 Test oil : ISO-4113
 Combination No. : 0 401 846 907
 Injection pump
 Pump designation : PE6P120A32CLS3815
 : -13
 EP type number : 0 411 826 782
 Governor
 Governor design. : RQV350..1050PA925
 Governor no. : 0 421 813 764

Cust. part No. :

Customer-spec. information
 Customer : DB-NKW
 Motor : OM 441 A
 Power KW : 191.0

TEST BENCH REQUIREMENTS

Test oil inlet
 temp. °C : 40.0
 Tolerance °C : ± 2.0
 Overflow valve : 1 417 413 025
 Inlet press. bar : 1.50
 Overflow quantity
 min. l/h : 110.0
 Tolerance l/h : ± 10.0
 Test nozzle holder
 assembly : 1 688 901 019
 Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1 680 750 067

K23

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
 Tolerance bar : ± 1.0

Prestroke mm : 3.65
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10

Rack travel in mm : 10.50
 Tolerance mm : ± 1.50

Firing order : 6- 3- 5- 2- 4
 : - 1

Phasing : 0-60-120-180-240
 : -300
 Tolerance : ± 0.50
 Check
 tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.45
 Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 183.50

Tolerance
 cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 4.50

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350.0

Rack travel in mm : 4.90
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 18.00

Tolerance
cm³/1000 strokes : ± 4.00

Check tolerance
cm³/1000S. : ± 7.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.50
Tolerance mm : ± 0.10

Rated speed rpm : 800
guide sleeve
travel mm : 4.90
Tolerance mm : ± 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 7.90
Tolerance mm : ± 0.30

Rated speed rpm : 1175
guide sleeve
travel mm : 9.50
Tolerance mm : ± 0.30

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1080

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 185.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.50
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 16.5
Rated speed rpm : 1080

rack travel mm : 10.70
Rated speed rpm : 1095.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1165.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.9

Rated speed rpm : 250

CRT mm min. : 8.00

Testing:

Rated speed rpm : 350
rack travel mm : 4.90
Tolerance mm : ± 0.30

TORQUE CONTROL

Dimension a mm : 1.30
Rated speed rpm : 1050
rack travel mm : 11.45
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 850
rack travel mm : 12.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 0.90
Tolerance mm : ± 0.10

Pressure hPa : 600
rack travel mm : 2.60
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 270

Check
speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 211.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Check tolerance
cm³/1000S. : 12.00

Aneroid pressure
hPa :)
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm : 4.90

Tolerance mm : \pm 0.30

Del. quantity

cm³/1000 strokes : 18.00

Tolerance

cm³/1000 strokes : \pm 4.00

Check tolerance

cm³/1000S. : \pm 7.00

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.90
Test oil : ISO-4113

Combination No. : 0 401 848 807

Injection pump
Pump designation : PE8P130A520/4RS3126
EP type number : 0 411 838 707

Governor
Governor design. : RQV400...750PA934-1
Governor no. : 0 421 813 817

Cust. part No. :

Customer-spec. information
Customer : BAUDOUIN
Motor : 8P15

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 074

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 4- 5- 6- 3
: - 7- 8

Phasing : 0-45-90-135-180-225
: -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 193.50

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 400.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 7.00

Spread
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.00
Tolerance mm : ± 0.10

Rated speed rpm : 475
guide sleeve
travel mm : 2.00
Tolerance mm : ± 0.10

Rated speed rpm : 600
guide sleeve
travel mm : 2.00
Tolerance mm : ± 0.10

Rated speed rpm : 750
guide sleeve
travel mm : 5.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 193.50
Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 5.00
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.30
Rated speed rpm : 752.5
Tolerance 1/min : ± 2.5

rack travel mm : 4.00
Rated speed rpm : 775.0
Tolerance 1/min : ± 5.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 900

LOW IDLE

control lever
position degree : 86.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.0

Rated speed rpm : 100

CRT mm min. : 6.50

Testing:

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.35
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 340

Check
speed 1/min : 360

LOW IDLE

Rated speed rpm : 400.0

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 7.00

Speed
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.03.90
Test oil : ISO-4113

Combination No. : 0 401 848 809

Injection pump
Pump designation : PE8P110A320LS3842-1
EP type number : 0 411 818 716

Governor
Governor design. : RQV350..1050PA378-7
Governor no. : 0 421 813 714

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 110.0
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3- 5
: - 4- 1

Phasing : 0-45-90-135-180-225
: -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 138.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : \pm 3.50

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 350.0

Rack travel in mm : 8.15
Tolerance mm : \pm 0.15

Del. quantity
cm³/1000 strokes : 18.00

Tolerance
cm³/1000 strokes : \pm 3.00

Check tolerance
cm³/1000S. : \pm 5.50

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.60
Tolerance mm : \pm 0.10

Rated speed rpm : 800
guide sleeve
travel mm : 5.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 8.20
Tolerance mm : \pm 0.30

Rated speed rpm : 1150
guide sleeve
travel mm : 9.30
Tolerance mm : \pm 0.40

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1110

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 138.00
Tolerance
cm³/1000 strokes : \pm 1.00
Check tolerance
cm³/1000S. : \pm 3.50
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 16.5
Rated speed rpm : 1110

rack travel mm : 11.70
Rated speed rpm : 1095.0
Tolerance 1/min : \pm 5.0

rack travel mm : 4.00
Rated speed rpm : 1155.0
Tolerance 1/min : \pm 15.0

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 8.1

Rated speed rpm : 250

CRT mm min. : 9.50

Testing:

Rated speed rpm : 350
rack travel mm : 8.15
Tolerance mm : ± 0.15

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 270

Check
speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 126.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 8.

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 88.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 6.00
Check tolerance
cm³/1000S. : 9.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm : 8.15
Tolerance mm : ± 0.15
Del. quantity
cm³/1000 strokes : 18.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.50
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.03.90
Test oil : ISO-4113

Combination No. : 0 401 848 811

Injection pump
Pump designation : PE8P110A320LS3842-2
EP type number : 0 411 818 722

Governor
Governor design. : RQV350..1050PA378
 : -11
Governor no. : 0 421 813 714

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 110.0
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

L05

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3- 5
 : - 4- 1

Phasing : 0-45-90-135-180-225
 : -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 138.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.50

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 350.0

Rack travel in mm : 8.15
Tolerance mm : ± 0.15

Del. quantity
cm³/1000 strokes : 18.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.50

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.60
Tolerance mm : ± 0.10

Rated speed rpm : 800
guide sleeve
travel mm : 5.10
Tolerance mm : ± 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 8.20
Tolerance mm : ± 0.30

Rated speed rpm : 1150
guide sleeve
travel mm : 9.30
Tolerance mm : ± 0.40

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1110

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Del. quantity

cm³/1000 strokes : 138.00
Tolerance

cm³/1000 strokes : ± 1.00
Check tolerance

cm³/1000S. : ± 3.50
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
Rated speed rpm : 1110

rack travel mm : 11.70
Rated speed rpm : 1095.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1155.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 8.1

Rated speed rpm : 250

CRT mm min. : 9.50

Testing:

Rated speed rpm : 350
rack travel mm : 8.15
Tolerance mm : ± 0.15

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.75
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 270

Check
speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 126.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 8.

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm : 8.15
Tolerance mm : ± 0.15

Del. quantity
cm³/1000 strokes : 18.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.50

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.90
Test oil : ISO-4113

Combination No. : 0 401 849 744A

Injection pump
Pump designation : PE10P120A520/4LS3849
EP type number : 0 411 829 708

Governor
Governor design. : RQ750PA663-7
Governor no. : 0 421 801 331

Cust. part No. : 2-7976

Customer-spec. information
Customer : MAN
Motor : D2840 LE
Power KW : 405.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

LC8

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8
 : - 7- 6- 3- 5
 : - 2

Phasing : 0-45-72-117-144-189
 : -216-261-288-333
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 237.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 4.70
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 237.00
Tolerance
cm³/1000 strokes : \pm 1.00
Check tolerance
cm³/1000S. : \pm 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 950

LOW IDLE

Testing:

L09

rack travel mm : 4.70
Tolerance mm : \pm 0.20

TORQUE CONTROL
Rated speed rpm : 850
rack travel mm : 12.55
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 4.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.01.90
Test oil : ISO-4113

Combination No. : 0 401 849 746

Injection pump
Pump designation : PE10P120A520/4LS3855
EP type number : 0 411 829 709

Governor
Governor design. : RQV300...1000PA838
Governor no. : 0 421 813 585

Cust. part No. : 2-7779

Customer-spec. information
Customer : MAN
Motor : D2840LF/460
Power KW : 338.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

L10

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8
 : - 7- 6- 3- 5
 : - 2

Phasing : 0-45-72-117-144-189
 : -216-261-288-333
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 205.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 5.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.20
Tolerance mm : ± 0.20

Rated speed rpm : 500
guide sleeve
travel mm : 3.30
Tolerance mm : ± 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.75
Tolerance mm : ± 0.15

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1025

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 205.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
Rated speed rpm : 1025

rack travel mm : 9.50
Rated speed rpm : 1045.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1120.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 84.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.3

Rated speed rpm : 100

CRT mm min. : 6.80

Testing:

Rated speed rpm : 300
rack travel mm : 5.30
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 10.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 10.55
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 9.30
Tolerance mm : ± 0.10

Pressure hPa : 380
rack travel mm : 9.65
Tolerance mm : ± 0.05

Pressure hPa : 500
rack travel mm : 10.20
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : 230

Check
speed 1/min : 250

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 145.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 300.0
Rack travel in mm : 5.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.11.89
Test oil : ISO-4113

Combination No. : 0 401 876 333

Injection pump
Pump designation : PE6P120A320RS257
EP type number : 0 411 826 075

Governor
Governor design. : RSV250...1100POA533
Governor no. : 0 421 833 274

Cust. part No. : 181340

Customer-spec. information
Customer : ENASA
Motor : 96 T1A0
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

L13

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 187.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250.0

Rack travel in mm : 5.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 187.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 94.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.5
Rated speed rpm : 800

rack travel mm : 9.10
Rated speed rpm : 1145.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1185.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00
Rated speed rpm : 1185.0

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.3

Rated speed rpm : 100

CRT mm min. : 19.50

Testing:

Rated speed rpm : 250
rack travel mm : 5.80
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 360.0
Tolerance 1/min : ± 30.0

TORQUE CONTROL

Dimension a mm : 2.90
Rated speed rpm : 1050
rack travel mm : 10.15
Tolerance mm : ± 0.05

Rated speed rpm : 450
rack travel mm : 10.15
Tolerance mm : ± 0.05

Rated speed rpm : 300
rack travel mm : 11.60
Tolerance mm : ± 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 5.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.01.90
Test oil : ISO-4113
Combination No. : 0 402 036 069
Injection pump
Pump designation : PES6P120A720/3LS470
 : -3
EP type number : 0 412 026 051

Governor
Governor design. : RQ300/1100PA579-2
Governor no. : 0 421 801 402

Cust. part No. : 2-7878

Customer-spec. information
Customer : MAN
Motor : D2866LUL/290
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
 : - 3

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 10.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 184.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 45
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 184.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 20.0
Rated speed rpm : 600

rack travel mm : 9.60
Rated speed rpm : 1152.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1195.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.1

Rated speed rpm : 100

CRT mm min. : 6.60

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 365.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.20
Rated speed rpm : 750
rack travel mm : 10.65
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : ± 0.10

Rated speed rpm : 925
rack travel mm : 10.85

Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 10.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : ± 0.10

Pressure hPa : 210
rack travel mm : 9.15
Tolerance mm : ± 0.05

Pressure hPa : 375
rack travel mm : 10.05
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : 190

Check
speed 1/min : 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 193.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 1000
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 177.00
Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 5.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.82
Test oil : ISO-4113
Combination No. : 0 402 036 079
Injection pump
Pump designation : PES6P120A72D/3LS470
 : -2
EP type number : 0 412 026 050

Governor
Governor design. : RGV300...1100PA876
Governor no. : 0 421 813 661

Cust. part No. : 2-7761

Customer-spec. information
Customer : MAN
Motor : D2866LF/290
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
 : - 3

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 184.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.85
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.10
Tolerance mm : ± 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 8.20
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1190

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 184.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
Rated speed rpm : 1190

rack travel mm : 8.70
Rated speed rpm : 1145.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1220.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 86.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.1

Rated speed rpm : 100

CRT mm min. : 6.60

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : ± 0.10

TORQUE CONTROL

Dimension a mm : 0.80
Rated speed rpm : 750
rack travel mm : 10.35
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 9.85
Tolerance mm : ± 0.05

Rated speed rpm : 925
rack travel mm : 10.15
Tolerance mm : ± 0.05

Rated speed rpm : 975
rack travel mm : 9.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 10.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 9.10
Tolerance mm : ± 0.10

Pressure hPa : 85
rack travel mm : 9.45
Tolerance mm : ± 0.05

Pressure hPa : 160
rack travel mm : 10.00
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 220

Check
speed 1/min : 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 180.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000s. : ± 5.00

Aneroid pressure
hPa : 1000
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 177.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 6.00

Aneroid pressure
hPa : 60
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.00
Tolerance
cm³/1000 strokes : ± 6.00
Check tolerance
cm³/1000s. : ± 9.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000s. : ± 14.00

LOW IDLE

Rated speed rpm : 300.0
Rack travel in mm : 5.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.90
Test oil : ISO-4113
Combination No. : 0 402 036 080
Injection pump
Pump designation : PES6P120A720/3LS470
 : -2
EP type number : 0 412 026 050
Governor
Governor design. : RQ300/1100PA813-11
Governor no. : 0 421 801 514
Cust. part No. : 2-7756

Customer-spec. information
Customer : MAN
Motor : D2866LF
Power kW : 243.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.50
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 6.00
x inside diameter : 1.00

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 6- 2- 4- 1- 5
 : - 3
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 203.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 108
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 203.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED
rack travel mm : 20.0
Rated speed rpm : 600

rack travel mm : 9.70
Rated speed rpm : 1152.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1200.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.8

Rated speed rpm : 100

CRT mm min. : 6.30

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 360.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.50
Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.05
Tolerance mm : ± 0.15

Rated speed rpm : 875
rack travel mm : 11.90

Tolerance mm : \pm 0.10
Rated speed rpm : 950
rack travel mm : 11.35
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 9.00
Tolerance mm : \pm 0.10
Pressure hPa : 85
rack travel mm : 9.35
Tolerance mm : \pm 0.05

Pressure hPa : 280
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : 220

Check
speed 1/min : 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 207.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 5.00

Aneroid pressure
hPa : 1000
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 201.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00

Aneroid pressure
hPa : 80
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : \pm 6.00
Check tolerance
cm³/1000S. : \pm 9.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.00
Tolerance
cm³/1000 strokes : \pm 1.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.00
Tolerance
cm³/1000 strokes : \pm 10.00
Check tolerance
cm³/1000S. : \pm 14.00

LOW IDLE

Rated speed rpm : 300.0
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.01.90
Test oil : ISO-4113

Combination No. : 0 402 046 208

Injection pump
Pump designation : PES6P120A720LS388
EP type number : 0 412 026 030

Governor
Governor design. : RQ250/1100PA509
Governor no. : 0 421 801 117

Cust. part No. : 2-7083

Customer-spec. information
Customer : MAN
Motor : D2566MKF
Power KW : 206.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
: - 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 179.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250.0

Rack travel in mm : 6.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -2
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 179.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED
rack travel mm : 20.0
Rated speed rpm : 600

rack travel mm : 9.20
Rated speed rpm : 1152.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1195.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 6.3

Rated speed rpm : 100

CRT mm min. : 7.80

Testing:

Rated speed rpm : 250
rack travel mm : 6.30
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 355.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.50
Rated speed rpm : 750
rack travel mm : 11.45
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 10.25
Tolerance mm : ± 0.05

Rated speed rpm : 875
rack travel mm : 11.20

Tolerance mm : ± 0.10
Rated speed rpm : 985
rack travel mm : 10.55
Tolerance mm : ± 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.45
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 9.25
Tolerance mm : ± 0.05
Pressure hPa : 310
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 430
rack travel mm : 11.00
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : 170

Check
speed 1/min : 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 163.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 700
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 174.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 10
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 105.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 6.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.01.90
Test oil : ISO-4113

Combination No. : 0 402 046 209

Injection pump
Pump designation : PES6P120A72OLS388
EP type number : 0 412 026 030

Governor
Governor design. : RQ250/1100PA509
Governor no. : 0 421 801 117

Cust. part No. : 2-7066

Customer-spec. information
Customer : MAN
Motor : D2566MK
Power KW : 206.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

M03

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
: - 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 179.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 250.0

 Rack travel in mm : 6.30
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 15.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 6.00
 Speed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : -2
 Rated speed rpm : 600

 Rack travel in mm : 20.00
 Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 179.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 4.00
 Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

RATED SPEED
 rack travel mm : 20.0
 Rated speed rpm : 600

 rack travel mm : 9.20
 Rated speed rpm : 1152.5
 Tolerance 1/min : ± 7.5

 rack travel mm : 4.00
 Rated speed rpm : 1195.0
 Tolerance 1/min : ± 15.0

 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1400

LOW IDLE

control lever
 position degree : 13.0
 tolerance degree : ± 4.0

Setting point without bumper spring

Rated speed rpm : 250
 rack travel mm : 6.3

 Rated speed rpm : 100

 CRT mm min. : 7.80

 Testing:

 Rated speed rpm : 250
 rack travel mm : 6.30
 Tolerance mm : ± 0.10

 rack travel mm : 2.00
 Rated speed rpm : 355.0
 Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.50
 Rated speed rpm : 750
 rack travel mm : 11.45
 Tolerance mm : ± 0.05

 Rated speed rpm : 1100
 rack travel mm : 10.25
 Tolerance mm : ± 0.05

 Rated speed rpm : 875
 rack travel mm : 11.20

Tolerance mm : ± 0.10
Rated speed rpm : 985
rack travel mm : 10.55
Tolerance mm : ± 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.45
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 9.25
Tolerance mm : ± 0.05

Pressure hPa : 310
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 430
rack travel mm : 11.00
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : 170

Check
speed 1/min : 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 163.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 700
Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 174.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 10
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 134.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 105.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 6.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.01.90
Test oil : ISO-4113

Combination No. : 0 402 046 287

Injection pump
Pump designation : PES6P100A720LS471
EP type number : 0 412 006 034

Governor
Governor design. : RQ250/1100PA685
Governor no. : 0 421 801 227

Cust. part No. : 2-7454

Customer-spec. information
Customer : MAN
Motor : D2566UH/200
Power KW : 147.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
: - 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 95.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.50

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 600

Rack travel in mm : 16.00
Tolerance mm : ± 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 95.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

RATED SPEED
rack travel mm : 16.0

M08

Rated speed rpm : 600
rack travel mm : 11.20
Rated speed rpm : 1152.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1230.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 9.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.0

Rated speed rpm : 100

CRT mm min. : 6.50

Testing:

Rated speed rpm : 250
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 360.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 1100
rack travel mm : 12.30
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 86.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 102.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 15.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.50
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.89

Test oil : ISO-4113

Combination No. : 0 402 046 322

Injection pump

Pump designation : PES6P110A720LS375

EP type number : 0 412 016 053

Governor

Governer design. : RQ250/1100PA658-17

Governer no. : 0 421 801 309

Cust. part No. : 2-7588

Customer-spec. information

Customer : MAN

Motor : D2566 MTUH/265

Power KW : 195.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly

: 0 681 343 009

Opening pressure
bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 600

M10

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5

: - 3

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 144.00

Tolerance

cm³/1000 strokes : ± 1.00

Check tolerance

cm³/1000S. : ± 3.50

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 250.0

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.50

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 45
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 144.00
Tolerance
cm³/1000 strokes : \pm 1.00
Check tolerance
cm³/1000S. : \pm 3.50

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED
rack travel mm : 20.0
Rated speed rpm : 600

rack travel mm : 11.70
Rated speed rpm : 1152.5
Tolerance 1/min : \pm 7.5

rack travel mm : 4.00
Rated speed rpm : 1200.0
Tolerance 1/min : \pm 15.0

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 13.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 7.0

Rated speed rpm : 100

CRT mm min. : 8.50

Testing:

Rated speed rpm : 250
rack travel mm : 7.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380.0
Tolerance 1/min : \pm 20.0

TORQUE CONTROL

Dimension a mm : 0.40
Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 810
rack travel mm : 12.60

Tolerance mm : ± 0.10
Rated speed rpm : 950
rack travel mm : 12.10
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 10.85
Tolerance mm : ± 0.05

Pressure hPa : 200
rack travel mm : 11.45
Tolerance mm : ± 0.05

Pressure hPa : 310
rack travel mm : 12.10
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 170

Check
speed 1/min : 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 158.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00

Aneroid pressure
hPa : 200
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 125.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 113.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.50

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 235.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 7.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 13.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.50
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.90
Test oil : ISO-4113

Combination No. : 0 402 046 338

Injection pump
Pump designation : PES6P120A32ORS522
EP type number : 0 412 026 057

Governor
Governor design. : RQV275...1000PA912
Governor no. : 0 421 813 744

Cust. part No. :

Customer-spec. information
Customer : RVI
Motor : MIDR062045L
Power kW : 176.5

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

M13

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 18.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 171.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275.0

Rack travel in mm : 6.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 43.90
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 0.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 3.80
Tolerance mm : ± 0.30

Rated speed rpm : 750
guide sleeve
travel mm : 5.50
Tolerance mm : ± 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 7.20
Tolerance mm : ± 0.10

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1130

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 171.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 16.5
Rated speed rpm : 1130

rack travel mm : -1.00
Rated speed rpm : 1080.0
Tolerance 1/min : ± 5.0

rack travel mm : -8.00
Rated speed rpm : 1215.0
Tolerance 1/min : ± 15.0

rack travel mm : -11.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 67.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
rack travel mm : 6.3

Rated speed rpm : 100

Testing:

Rated speed rpm : 275
rack travel mm : 6.30
Tolerance mm : ± 0.20

Rated speed rpm : 200

CRT mm max. : -4.60

TORQUE CONTROL

Rated speed rpm : 1000

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Rated speed rpm : 500
rack travel mm : -1.75
Tolerance mm : ± 0.15

Pressure hPa : 240
rack travel mm : -0.35
Tolerance mm : ± 0.05

Pressure hPa : 140
rack travel mm : -1.25
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : 195

Check
speed 1/min : 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 155.00

Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 65.00
Tolerance
cm³/1000 strokes : ± 3.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 98.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.00
Tolerance
cm³/1000 strokes : ± 15.00
Check tolerance
cm³/1000S. : ± 15.00

LOW IDLE

Rated speed rpm : 275.0

Rack travel in mm : 6.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.03.90
Test oil : ISO-4113
Combination No. : 0 402 046 784A
Injection pump
Pump designation : PE36P120A320RS3139
EP type number : 0 412 026 718

Governor
Governor design. : RQV275...1000PA728
Governor no. : 0 421 813 599

Cust. part No. :

Customer-spec. information
Customer : RVI
Motor : MIDR 062045 E
Power KW : 236.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

M17

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery differende
betw. rack trav.
mm : 10.50
Tolerance mm : ± 0.50

BASIC SETTING

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 160.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 275.0
 Rack travel in mm : 5.70
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 26.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 6.00
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.00
 Tolerance mm : ± 0.10

Rated speed rpm : 450
 guide sleeve
 travel mm : 3.50
 Tolerance mm : ± 0.20

Rated speed rpm : 800
 guide sleeve
 travel mm : 5.80
 Tolerance mm : ± 0.20

Rated speed rpm : 1000
 guide sleeve
 travel mm : 7.10
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : -1
 Rated speed rpm : 1170

Rack travel in mm : 16.50

M18

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 160.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 4.00
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 119.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
 Rated speed rpm : 1170

rack travel mm : -1.00
 Rated speed rpm : 1070.0
 Tolerance 1/min : ± 5.0

rack travel mm : -7.60
 Rated speed rpm : 1195.0
 Tolerance 1/min : ± 15.0

rack travel mm : -10.80
 Tolerance mm : ± 0.20
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
 rack travel mm : 5.7

Testing:

Rated speed rpm : 275
rack travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm max. : -4.00

TORQUE CONTROL

Rated speed rpm : 1000

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Rated speed rpm : 500

rack travel mm : -2.80
Tolerance mm : ± 0.10

Pressure hPa : 320
rack travel mm : -0.65
Tolerance mm : ± 0.05

Pressure hPa : 160
rack travel mm : -2.00
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : 195

Check
speed 1/min : 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 185.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 109.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 175.00
Tolerance
cm³/1000 strokes : ± 15.00
Check tolerance
cm³/1000S. : ± 19.00

LOW IDLE

Rated speed rpm : 275.0

Rack travel in mm : 5.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 26.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113

Combination No. : 0 402 046 791A

Injection pump
Pump designation : PES6P120A320RS3139
EP type number : 0 412 026 718

Governor
Governor design. : RQV275...950PA728-4
Governor no. : 0 421 313 573

Cust. part No. :

Customer-spec. information
Customer : RVI
Motor : MIDR 063540 H
Power KW : 264.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 600

M20

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

betw. rack trav.
mm : 10.50
Tolerance mm : ± 0.50

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 211.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275.0

Rack travel in mm : 7.70
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 26.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.50
Tolerance mm : ± 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.50
Tolerance mm : ± 0.20

Rated speed rpm : 800
guide sleeve
travel mm : 5.80
Tolerance mm : ± 0.20

Rated speed rpm : 950
guide sleeve
travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 1500
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1125

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 211.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 16.5
Rated speed rpm : 1125

rack travel mm : -1.00
Rated speed rpm : 1020.0
Tolerance 1/min : ± 5.0

rack travel mm : -9.30
Rated speed rpm : 1175.0
Tolerance 1/min : ± 15.0

rack travel mm : -12.65
Tolerance mm : ± 0.35
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
rack travel mm : 7.7

Testing:

Rated speed rpm : 275
rack travel mm : 7.70
Tolerance mm : ± 0.20

Rated speed rpm : 200
CRT mm max. : -6.10

TORQUE CONTROL

Rated speed rpm : 600

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Rated speed rpm : 500

rack travel mm : -3.70
Tolerance mm : ± 0.20

Pressure hPa : 660
rack travel mm : -0.65
Tolerance mm : ± 0.05

Pressure hPa : 200
rack travel mm : -3.00
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : 195

Check
speed 1/min : 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 950

Del. quantity
cm³/1000 strokes : 213.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 89.00
Tolerance
cm³/1000 strokes : ± 71.00
Check tolerance
cm³/1000S. : ± 67.00

LOW IDLE

Rated speed rpm : 275.0

Rack travel in mm : 7.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 26.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113

Combination No. : 0 402 046 791a

Injection pump
Pump designation : PES6P120A320RS3139
EP type number : 0 412 026 718

Governor
Governor design. : RQV275...950PA728-4
Governor no. : 0 421 813 678

Cust. part No. :

Customer-spec. information
Customer : RVI
Motor : MIDR 063540 H
Power KW : 264.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 600

M23

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery differende

betw. rack trav.
mm : 10.50
Tolerance mm : ± 0.50

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm3/1000 strokes : 211.00

Tolerance
cm3/1000 strokes : ± 1.00

Check tolerance
cm3/1000s. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275.0

Rack travel in mm : 7.70
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 26.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.50
Tolerance mm : ± 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.50
Tolerance mm : ± 0.20

Rated speed rpm : 800
guide sleeve
travel mm : 5.80
Tolerance mm : ± 0.20

Rated speed rpm : 950
guide sleeve
travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 1500
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1125

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 211.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 16.5
Rated speed rpm : 1125

rack travel mm : -1.00
Rated speed rpm : 1020.0
Tolerance 1/min : ± 5.0

rack travel mm : -9.30
Rated speed rpm : 1175.0
Tolerance 1/min : ± 15.0

rack travel mm : -12.65
Tolerance mm : ± 0.35
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
rack travel mm : 7.7

Testing:

Rated speed rpm : 275
rack travel mm : 7.70
Tolerance mm : ± 0.20

Rated speed rpm : 200
CRT mm max. : -6.10

TORQUE CONTROL
Rated speed rpm : 600

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Rated speed rpm : 500
rack travel mm : -3.70
Tolerance mm : ± 0.20

Pressure hPa : 660
rack travel mm : -0.65
Tolerance mm : ± 0.05

Pressure hPa : 200
rack travel mm : -3.00
Tolerance mm : ± 0.10

Start interlock

Rated speed rpm : 195

Check
speed 1/min : 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 950

Del. quantity
cm³/1000 strokes : 213.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 89.00
Tolerance
cm³/1000 strokes : ± 71.00
Check tolerance
cm³/1000S. : ± 67.00

LOW IDLE

Rated speed rpm : 275.0
Rack travel in mm : 7.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 26.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.90
Test oil : ISO-4113

Combination No. : 0 402 046 814

Injection pump
Pump designation : PES6P120A720LS3229
EP type number : 0 412 026 733

Governor
Governor design. : RQ750PA945
Governor no. : 0 421 801 512

Cust. part No. : 2-7970

Customer-spec. information
Customer : MAN
Motor : D2866LE
Power KW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00
x length mm : 1000

M26

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
: - 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 282.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 4.40
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 27.00
Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 282.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

LOW IDLE

Testing:

rack travel mm : 4.40
Tolerance mm : ± 0.30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.55
Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.55
Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 4.40
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 27.00
Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113

Combination No. : 0 402 640 818

Injection pump
Pump designation : PE12P120A520LS7829
EP type number : 0 412 620 821

Governor
Governor design. : RQV250...1150PA943
Governor no. : 0 421 813 850

Cust. part No. : 3-7023

Customer-spec. information
Customer : MAN
Motor : D2842LZE
Power kW : 809.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6

Phasing : 0-45-60-105-120-165
: -180-225-240-285
: -300-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 305.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 250
guide sleeve	
travel mm	: 1.00
Tolerance mm	: \pm 0.20

Rated speed rpm	: 450
guide sleeve	
travel mm	: 3.20
Tolerance mm	: \pm 0.30

Rated speed rpm	: 750
guide sleeve	
travel mm	: 5.70
Tolerance mm	: \pm 0.20

Rated speed rpm	: 1150
guide sleeve	
travel mm	: 9.30
Tolerance mm	: \pm 0.10

Rated speed rpm	: 1400
guide sleeve	
travel mm	: 13.50
Tolerance mm	: \pm 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: -1
Rated speed rpm	: 1225

Rack travel in mm	: 16.50
Tolerance mm	: \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure	
hPa	: 1300

N01

Del. quantity	
cm3/1000 strokes	: 305.00
Tolerance	
cm3/1000 strokes	: \pm 1.00
Check tolerance	
cm3/1000S.	: \pm 4.00
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 121.0
tolerance degree	: \pm 4.0

RATED SPEED

rack travel mm	: 16.5
Rated speed rpm	: 1225

rack travel mm	: 12.80
Rated speed rpm	: 1195.0
Tolerance 1/min	: \pm 5.0

rack travel mm	: 4.00
Rated speed rpm	: 1300.0
Tolerance 1/min	: \pm 15.0

rack travel mm	: 0.50
Tolerance mm	: \pm 0.50
Rated speed rpm	: 1400

LOW IDLE

control lever	
position degree	: 80.0
tolerance degree	: \pm 2.0

Setting point w/out bumper spring

Rated speed rpm	: 250
rack travel mm	: 7.4

Rated speed rpm	: 100
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CRT mm min.	: 8.90
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Testing:

Rated speed rpm	: 250
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TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 9.20
Tolerance mm : ± 0.10

Pressure hPa : 100
rack travel mm : 9.55
Tolerance mm : ± 0.05

Pressure hPa : 470
rack travel mm : 12.20
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 170

Check
speed 1/min : 190

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

STARTING FUEL DELIVERY

Rated speed rpm : 100

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.04.90
Test oil : ISO-4113

Combination No. : 0 402 640 818

Injection pump
Pump designation : PE12P120A520LS7829
EP type number : 0 412 620 821

Governor
Governor design. : RQV300...1150PA943
Governor no. : 0 421 813 850

Cust. part No. : 3-7023

Customer-spec. information
Customer : MAN
Motor : D2842LZE
Power KW : 809.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

N03

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6

Phasing : 0-45-60-105-120-165
: -180-225-240-285
: -300-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 305.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 250
guide sleeve	
travel mm	: 1.00
Tolerance mm	: ± 0.20

Rated speed rpm	: 450
guide sleeve	
travel mm	: 3.20
Tolerance mm	: ± 0.30

Rated speed rpm	: 750
guide sleeve	
travel mm	: 5.70
Tolerance mm	: ± 0.20

Rated speed rpm	: 1150
guide sleeve	
travel mm	: 9.30
Tolerance mm	: ± 0.10

Rated speed rpm	: 1400
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: -1
Rated speed rpm	: 1225

Rack travel in mm	: 16.50
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure	
hPa	: 1300

N04

Del. quantity	
cm3/1000 strokes	: 305.00
Tolerance	
cm3/1000 strokes	: ± 1.00
Check tolerance	
cm3/1000S.	: ± 4.00
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 121.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 16.5
Rated speed rpm	: 1225

rack travel mm	: 12.80
Rated speed rpm	: 1195.0
Tolerance 1/min	: ± 5.0

rack travel mm	: 4.00
Rated speed rpm	: 1300.0
Tolerance 1/min	: ± 15.0

rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1400

LOW IDLE

control lever	
position degree	: 80.0
tolerance degree	: ± 2.0

Setting point w/out bumper spring

Rated speed rpm	: 300
rack travel mm	: 7.4

Rated speed rpm	: 100
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CRT mm min.	: 8.90
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Testing:

Rated speed rpm	: 300
-----------------	-------

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 9.20
Tolerance mm : ± 0.10

Pressure hPa : 100
rack travel mm : 9.55
Tolerance mm : ± 0.05

Pressure hPa : 470
rack travel mm : 12.20
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 170

Check
speed 1/min : 190

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

STARTING FUEL DELIVERY

Rated speed rpm : 100

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.11.89
Test oil : ISO-4113

Combination No. : 0 402 646 859

Injection pump
Pump designation : PE6P130A720RS7153
EP type number : 0 412 636 809

Governor
Governor design. : RQV300...950PA883
Governor no. : 0 421 813 690

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8210.42.300

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter : 3.00
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 298.50

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 5.00

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 300.0

Rack travel in mm : 3.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 22.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 7.00

Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.10
Tolerance mm : ± 0.30

Rated speed rpm : 700
guide sleeve
travel mm : 5.30
Tolerance mm : ± 0.20

Rated speed rpm : 950
guide sleeve
travel mm : 7.20
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1000

Rack travel in mm : 16.50

N07

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 298.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
Rated speed rpm : 1000

rack travel mm : 11.80
Rated speed rpm : 995.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1100.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 63.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 3.8

Rated speed rpm : 100

CRT mm min. : 6.30

Testing:

Rated speed rpm : 300
rack travel mm : 3.80
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 8.40
Tolerance mm : ± 0.10

Pressure hPa : 500
rack travel mm : 11.85
Tolerance mm : ± 0.05

Pressure hPa : 380
rack travel mm : 9.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 158.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 5.00

STARTING FUEL DELIVERY

N08

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 3.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 22.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 7.00

Spread
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.05.90
Test oil : ISO-4113
Combination No. : 0 402 646 906
Injection pump
Pump designation : PE6P120A320LS7808
EP type number : 0 412 626 816
Governor
Governor design. : RQ300/1050PA762-4
Governor no. : 0 421 801 390

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 228.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 110.0
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 057

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4
: - 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 221.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : \pm 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300.0

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.35
Tolerance mm : \pm 0.15

Rated speed rpm : 600
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 880
guide sleeve
travel mm : 6.25
Tolerance mm : \pm 0.15

Rated speed rpm : 1050
guide sleeve
travel mm : 6.35
Tolerance mm : \pm 0.15

Rated speed rpm : 1110
guide sleeve
travel mm : 6.65
Tolerance mm : \pm 0.15

GUIDE SLEEVE POSITION

control lever
position degree : 108
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 221.00
Tolerance
cm³/1000 strokes : \pm 1.00
Check tolerance
cm³/1000S. : \pm 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 20.0
Rated speed rpm : 600

rack travel mm : 13.80
Rated speed rpm : 1102.5
Tolerance 1/min : \pm 7.5

rack travel mm : 4.00
Rated speed rpm : 1165.0
Tolerance 1/min : \pm 15.0

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.7

Rated speed rpm : 200

CRT mm min. : 7.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : ± 0.30

rack travel mm : 2.00
Rated speed rpm : 400.0
Tolerance 1/min : ± 20.0

TORQUE CONTROL

Dimension a mm : 0.35
Rated speed rpm : 600
rack travel mm : 14.90
Tolerance mm : ± 0.10

Rated speed rpm : 1050
rack travel mm : 14.90
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 15.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600

MEASUREMENT

Rated speed rpm : 600

Start interlock

Rated speed rpm : 220

Check
speed 1/min : 240

N11

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1600

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 222.50

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 4.50

Speed
Tolerance
cm³/1000 strokes : 8.00

Check tolerance
cm³/1000S. : 12.

Aneroid pressure

hPa : 1600

Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 237.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.00

Check tolerance
cm³/1000S. : 12.00

Aneroid pressure

hPa :)

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 130.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed
Tolerance
cm³/1000 strokes : 8.00

Check tolerance
cm³/1000S. : 12.00

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 210.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 300.0
Rack travel in mm : 5.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.90
Test oil : ISO-4113
Combination No. : 0 402 648 803
Injection pump
Pump designation : PE8P120A920/4LS7003
EP type number : 0 412 628 801

Governor
Governor design. : RQ750PA528
Governor no. : 0 421 801 126

Cust. part No. :

Customer-spec. information
Customer : SAAB-SCANIA
Motor : s. Bemerkungen**

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4- 5
: - 6- 8

Phasing : 0-45-90-135-180-225
: -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 188.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 87.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 752.5
Tolerance 1/min : ± 2.5

rack travel mm : 4.00
Rated speed rpm : 790.5
Tolerance 1/min : ± 6.5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.00
Tolerance
cm³/1000 strokes : ± 25.00

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.04.90
Test oil : ISO-4113

Combination No. : 0 402 648 860

Injection pump
Pump designation : PE8P120A920/4LS7125
EP type number : 0 412 628 833

Governor
Governor design. : RQV200..1050PA736-6
Governor no. : 0 421 813 740

Cust. part No. :

Customer-spec. information
Customer : SCANIA
Motor : DS14,DSC14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00
x inside diameter : 3.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4- 5
: - 6- 8

Phasing : 0-45-90-135-180-225
: -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 215.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 225.0

Rack travel in mm : 5.10
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 18.00
Tolerance
cm³/1000 strokes : ± 2.00
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 225
guide sleeve
travel mm : 1.40
Tolerance mm : ± 0.20

Rated speed rpm : 350
guide sleeve
travel mm : 2.60
Tolerance mm : ± 0.30

Rated speed rpm : 650
guide sleeve
travel mm : 4.30
Tolerance mm : ± 0.30

Rated speed rpm : 1095
guide sleeve
travel mm : 8.30
Tolerance mm : ± 0.10

Rated speed rpm : 1215
guide sleeve
travel mm : 9.90
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

Rated speed rpm : 1100

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 16.5
Rated speed rpm : 1100

rack travel mm : 12.50
Rated speed rpm : 1095.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1215.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

rack travel mm : 5.0

Rated speed rpm : 100

CRT mm min. : 6.50

Testing:

Rated speed rpm : 225
rack travel mm : 5.10
Tolerance mm : ± 0.20

rack travel mm : 2.00
Rated speed rpm : 410.0
Tolerance 1/min : ± 30.0

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.55
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : ± 0.20

Pressure hPa : 365
rack travel mm : 12.85
Tolerance mm : ± 0.05

Pressure hPa : 215
rack travel mm : 12.00
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 209.00

Tolerance
cm³/1000 strokes : ± 4.00
Check tolerance
cm³/1000S. : ± 6.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 265.00
Tolerance
cm³/1000 strokes : ± 25.00

LOW IDLE

Rated speed rpm : 225.0
Rack travel in mm : 5.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 18.00
Tolerance
cm³/1000 strokes : ± 2.00
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 810

Injection pump
Pump designation : PES6P120A72CRS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...900PA848K
Governor no. : 0 421 815 168

Cust. part No. : 313GC5173P10

Customer-spec. information
Customer : MACK TRUCKS
Motor : E6 350 4VH
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 237.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.10

Rated speed rpm : 850
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.60
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 237.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.90
Rated speed rpm : 955.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1090.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.1

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.10
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.95
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 14.15
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.05
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 6.75
Tolerance mm : ± 6.75

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 625
rack travel mm : 8.70
Tolerance mm : ± 0.20

Pressure hPa : 275
rack travel mm : 10.05
Tolerance mm : ± 0.05

Pressure hPa : 570
rack travel mm : 12.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 260.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 144.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 814

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA848
: -1K
Governor no. : 0 421 815 169

Cust. part No. : 3136C5173P6

Customer-spec. information
Customer : MACK TRUCKS
Motor : E6 300 4VH
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

EASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 201.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : \pm 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 35.00

Tolerance
cm³/1000 strokes : \pm 3.00

Check tolerance
cm³/1000S. : \pm 5.00

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : \pm 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure

hPa : 900

Del. quantity
cm³/1000 strokes : 201.00

Tolerance
cm³/1000 strokes : \pm 1.00

Check tolerance
cm³/1000S. : \pm 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 905.0
Tolerance 1/min : \pm 5.0

rack travel mm : 4.00
Rated speed rpm : 1040.0
Tolerance 1/min : \pm 15.0

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.95
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 13.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.55
Tolerance mm : ± 6.55

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.60
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 10.10
Tolerance mm : ± 0.20

Pressure hPa : 250
rack travel mm : 10.95
Tolerance mm : ± 0.05

Pressure hPa : 475
rack travel mm : 12.80
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 220.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 236.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

Aneroid pressure
hPa :)

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet